

When Legislatures Delegate Death: The Troubling Paradox Behind State Uses of Electrocution and Lethal Injection and What it Says About Us

DEBORAH W. DENNO*

This article discusses the paradoxical motivations and problems behind legislative changes from one method of execution to the next, and particularly moves from electrocution to lethal injection. Legislatures and courts insist that the primary reason states switch execution methods is to ensure greater humaneness for death row inmates. History shows, however, that such moves were prompted primarily because the death penalty itself became constitutionally jeopardized due to a state's particular method. The result has been a warped legal "philosophy" of punishment, at times peculiarly aligning both friends and foes of the death penalty alike and wrongly enabling legislatures to delegate death to unknowledgeable prison personnel. This article first examines the constitutionality of electrocution, contending that a modern Eighth Amendment analysis of a range of factors, such as legislative trends toward lethal injection, indicates that electrocution is cruel and unusual. It then provides an Eighth Amendment review of lethal injection, demonstrating that injection also involves unnecessary pain, the risk of such pain, and a loss of dignity. These failures seem to be attributed to vague lethal injection statutes, uninformed prison personnel, and skeletal or inaccurate lethal injection protocols.

The article next presents the author's study of the most current protocols for lethal injection in all thirty-six states where anesthesia is used for a state execution. The study focuses on a number of criteria contained in many protocols that are key to applying an injection, including: the types and amounts of chemicals that are injected; the selection, training, preparation, and qualifications of the lethal

* Professor of Law, Fordham University School of Law. B.A., University of Virginia, 1974; M.A., University of Toronto, 1975; Ph.D., University of Pennsylvania, 1982; J.D., University of Pennsylvania, 1989. I am most grateful to the following individuals for their contributions to this article: Daniel Auld, Stephen Bright, Edward Brunner, Edward Chikofsky, Robert Cowey, Lawrence Egbert, Juan Fernandez, Bruce Green, Christopher Hale, Rick Halperin, John Hanusz, Roberta Harding, Mark Heath, Hunter Labovitz, Mathew Rubenstein, and Kevin Walsh. Any errors in this article are mine only. I give special thanks to Daniel Auld for creating most of this article's tables and for diligently collecting the information on lethal injection protocols. Numerous prison officials and administrators throughout the country graciously gave their time and resources to describe the execution procedures and protocols that this article discusses. The names and affiliations of these individuals are listed in Table 20 (Appendix I). I also appreciate the excellent research assistance provided by Janice Greer and Marianna Politzer, as well as the materials offered by the following organizations: the Fair Housing Center (New Jersey), the Georgia Resource Center, the Multicounty Public Defender (Georgia), and the Southern Center for Human Rights (Georgia). Lastly, I thank Fordham Law School for its characteristically generous research support, and the Institute for Advanced Legal Studies, University of London, for its helpful resources.

injection team; the involvement of medical personnel; the presence of general witnesses and media witnesses; as well as details on how the procedure is conducted and how much of it witnesses can see. The study emphasizes that the criteria in many protocols are far too vague to assess adequately. When the protocols do offer details, such as the amount and type of chemicals that executioners inject, they oftentimes reveal striking errors and ignorance about the procedure. Such inaccurate or missing information heightens the likelihood that a lethal injection will be botched and suggests that states are not capable of executing an inmate constitutionally. Even though executions have become increasingly hidden from the public, and therefore more politically palatable, they have not become more humane, only more difficult to monitor.

I. INTRODUCTION

The history of executions in this country is fraught with paradox about why legislatures change from one execution method to another.¹ This article focuses on the most recent versions of this quixotic dilemma—legislative moves from electrocution to lethal injection. Evidence suggests that state patterns of rejecting and retaining execution methods are diagnostic of the status of the death penalty process because they have gauged for more than a century how this country views executions, both literally and symbolically. Michel Foucault had long observed how methods of punishment and death were vibrant, social and political symbols.² The symbols have remained, but they have a disturbing modern twist. The death penalty in the United

¹ Currently, five different types of execution methods are used in this country: hanging, firing squad, electrocution, lethal gas, and lethal injection. *See infra* app. 1, tbl.1. For a discussion of legislative changes in execution methods over time, see generally Deborah W. Denno, *Getting to Death: Are Executions Constitutional?*, 82 IOWA L. REV. 319 (1997) [hereinafter Denno, *Getting to Death*]; Deborah W. Denno, *Is Electrocution an Unconstitutional Method of Execution? The Engineering of Death over the Century*, 35 WM. & MARY L. REV. 551 (1994) [hereinafter Denno, *Electrocution*].

² *See generally* MICHEL FOUCAULT, *DISCIPLINE AND PUNISH: THE BIRTH OF THE PRISON* (Alan Sheridan trans., 1977) [hereinafter FOUCAULT, *DISCIPLINE AND PUNISH*]. According to Foucault, the history of punishment is marked by increasing secrecy in which penalties “become the most hidden part of the penal process” and, as a result, “justice no longer takes public responsibility for the violence that is bound up with its practice.” *Id.* at 9. As a more modern commentator notes, what is considered “violent” is accompanied by limitations, even today. “Humane treatment simply does not offend human sensibilities, and therefore cannot be graphic, spectacular, or terroristic.” John W. Murphy, *Technology, Humanism and Death by Injection*, 11 PHIL. & SOC. ACTION 55, 56 (1985). The less passionate the method, the more humane it becomes because society appears to be guided by the exercise of reason, and its members characterized as rational actors. *See* MICHEL FOUCAULT, *MADNESS AND CIVILIZATION: A HISTORY OF INSANITY IN THE AGE OF REASON* 78 (Richard Howard trans., 1965). Electrocution was considered relatively less passionate than hanging because it appeared to be more a product of engineering. *See generally* Denno, *Electrocution*, *supra* note 1. Lethal injection appears to be a product of medicine and sanitized conditions. *See generally* Denno, *Getting to Death*, *supra* note 1.

States “has thus been retained more as the symbol of a particular politics than as an instrumental aspect of penal policy.”³

Generally, pro and con debates concerning the death penalty are divisively clear. Such predictability is not the hallmark of reactions to changes in execution methods, however. Oftentimes, friends and foes of the death penalty align both sides of the execution methods debate, despite their different goals. The result is a dangerous and distorted legal “philosophy” of punishment that erodes human rights and constitutional safeguards, most particularly the Eighth Amendment’s Cruel and Unusual Punishments Clause.⁴

The core of this execution methods paradox lies, not surprisingly, on whether legal actors want to reject or retain the death penalty and which stance will ensure their success. On the one hand, legislatures and courts have consistently claimed that the change from one method of execution to another provides the condemned the most humane and decent means of death possible given our knowledge of human science.⁵ At the same time, however, statutory and judicial behavior contradicts this purported rationale. For example, legislatures typically change an execution method only to stay one step ahead of a looming constitutional challenge to that method because the acceptability of the death penalty process itself therefore becomes jeopardized.⁶ Moreover, legislative changes to new execution methods oftentimes have not been retroactive; inmates already on death row when the change occurs must be executed by the older, more problematic method or they are still allowed to “choose” that method.⁷

In more recent years, death penalty proponents and opponents have united against lethal injection specifically. For example, some proponents feel that the older, more questionable method, typically electrocution, better represents their retributive sentiments than lethal injection;⁸ some opponents believe that lethal injection will increase the number and acceptability of executions because the death penalty will be more palatable.⁹ Paradoxically, the two sides also have united by promoting lethal injection because it appears more humane. For this reason, some proponents feel that

³ DAVID GARLAND, *PUNISHMENT AND MODERN SOCIETY* 245 (1990).

⁴ The Eighth Amendment provides that “[e]xcessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted.” U.S. CONST. amend. VIII.

⁵ See *infra* notes 111–17, 141–44, 152–54, 165–69, 210, 414, 424–25 and accompanying text.

⁶ See *infra* notes 9, 32–38, 57, 171, 203–04, 415 and accompanying text.

⁷ See, e.g., *infra* notes 145–58, 193–202 and accompanying text.

⁸ See *infra* notes 171, 417–20 and accompanying text.

⁹ See *infra* notes 172, 180–81, 210, 360, 426 and accompanying text; see also David Firestone, *Court to Rule on Method’s Constitutionality*, N.Y. TIMES, March 7, 2001, at A12 (noting that national opponents of the death penalty held “mixed feelings” about challenging the constitutionality of electrocution; although they oppose electrocution, several emphasized that lethal injection has been approved so overwhelmingly “precisely to make capital punishment more acceptable to the public”).

injection can save the death penalty from abolition¹⁰ while some opponents believe injection can save inmates from torture.¹¹ Public opinion polls occupy both camps: the public says it wants the death penalty,¹² but it also wants what it believes to be the most humane method of execution.¹³ Occasionally, inmates fuel the frenzy by picking for their own death the older, more controversial, execution method if they are in a state that allows such a choice—just to make a point about the barbarity of the death penalty.¹⁴ Of course, the media is allowed, if not required, to record whether the execution process is humane; yet, courts have routinely dismissed the media's accounts of botched executions in cases challenging the constitutionality of execution methods.¹⁵

Despite the overwhelming use of lethal injection in this country,¹⁶ many of those individuals who are medically qualified to carry out a proper and humane injection—doctors and nurses—simply do not want to do it.¹⁷ The nineteen percent who do¹⁸ confront opposition by influential medical societies.¹⁹ Legislatures delegate death to prison personnel and executioners who are not qualified to devise a lethal injection protocol, much less carry one out.²⁰ In an effort to present a medically sterile aura of peace, for example, executioners inject paralyzing drugs that serve no other purpose than to still a prisoner who, in reality, may be experiencing the hideous pains of dying but may not be able to express it.²¹ The consequences suggest the most duplicitous irony of all: the very method that seems most appealing in the eyes of the public is also one of the most unjustifiably cruel. In their all-consuming haste to perpetuate the death penalty, legislatures and courts promote an uncontrolled brutality that should have no place in society or the law. The U.S. stance also starkly contrasts with the approach in the international community, where the number of abolitionist countries increases each year.²²

¹⁰ See *infra* notes 37–38, 171, 426 and accompanying text.

¹¹ See *infra* notes 171, 180–81 and accompanying text; see also David Crary, *Electric Chair's Days Are Numbered as Cruelty Is Cited Punishment*, L.A. TIMES, Aug. 19, 2001, at A18.

¹² See *infra* notes 139–40, 424–26 and accompanying text.

¹³ See *infra* notes 139–40, 142, 424–26, 440 and accompanying text.

¹⁴ See *infra* notes 165–72 and accompanying text.

¹⁵ See *infra* notes 87, 275, 303–09 and accompanying text.

¹⁶ See *infra* notes 109–36 and accompanying text; app. 1, tbls.1–6.

¹⁷ Neil J. Farber et al., *Physicians' Willingness to Participate in the Process of Lethal Injection for Capital Punishment*, 135 ANNALS INTERNAL MED. 884, 886 (2001); see also *infra* notes 349–64 and accompanying text.

¹⁸ Farber et al., *supra* note 17, at 886; see also *infra* notes 352, 363–66 and accompanying text.

¹⁹ Linda L. Emanuel & Leigh B. Bienen, *Physician Participation in Executions: Time to Eliminate Anonymity Provisions and Protest the Practice*, 135 ANNALS INTERNAL MED. 922, 922–24 (2001); see *infra* notes 349–62 and accompanying text.

²⁰ See *infra* notes 386–401 and accompanying text.

²¹ See *infra* notes 230, 241–42, 258, 261, 318–21, 377, 435 and accompanying text.

²² Deborah W. Denno, *Capital Punishment and the Human Rights Norm*, 9 CRIM. L. FORUM

Part II of this article describes the current distribution of execution methods in this country as a prelude to discussing the history and modern development of Eighth Amendment standards and an execution methods jurisprudence. The Part emphasizes the United States Supreme Court's complete constitutional disregard for how inmates are executed, irrespective of a century-long pattern of horrifying, and entirely preventable, mishaps linked to all execution methods. The Part contends that an Eighth Amendment analysis of execution methods requires a simultaneous examination of the behaviors of all three institutional decision makers—legislatures, courts, and prison officials. Even though a legislature may consider a particular method to be the most humane under ideal circumstances, prison officials may, in practice, continually misapply the method. If a pattern of inappropriate application exists, the court should find that method unconstitutional, and the legislature should abandon that punishment.

Part III examines the constitutionality of electrocution using four interrelated criteria derived from the Court's modern Eighth Amendment jurisprudence. These criteria emphasize the importance of pain, the risk of pain, human dignity, and legislative trends reflecting changing execution methods.²³ The Part notes that pain is only one of a range of factors for evaluating execution methods, although evidence suggests that even a routine or "properly performed" execution can cause intense pain and a lingering death. When an analysis of electrocution considers other Eighth Amendment factors, such as legislative trends toward lethal injection, there are strong arguments suggesting that electrocution is cruel and unusual. Lastly, the Part examines case studies in three states (Georgia, Nebraska, and Ohio) that illustrate paradoxical legislative problems with electrocution.

Part IV overviews the origins of lethal injection, the types of lethal injection statutes, the lethal injection procedure, and judicial challenges to injection. Given the problems in all of these areas, the Part is a prelude to questioning legislatures' and courts' presumptions that injection meets the Eighth Amendment's standards.

Part V provides a modern Eighth Amendment analysis of lethal injection relying on the same standards and criteria used to assess electrocution, in addition to a focus on media coverage. Although legislative trends are moving exclusively in the direction of lethal injection, there still are important issues that bear on "evolving standards of decency," most particularly the American Medical Association's prohibition of physicians' participation in lethal injections. The Part concludes that there is substantial evidence that lethal injection involves an "unnecessary and wanton infliction of pain," the risk of such pain, and a loss of dignity. These problems seem to be attributed to vague lethal injection statutes, uninformed prison personnel, and

171, 171 (1999) (reviewing WILLIAM A. SCHABAS, *THE DEATH PENALTY AS CRUEL TREATMENT AND TORTURE: CAPITAL PUNISHMENT CHALLENGED IN THE WORLD'S COURTS* (1996)); *see also* note 87 and accompanying text (emphasizing the worldwide notice and condemnation of Allen Lee Davis's botched electrocution).

²³ *See infra* notes 74–80 and accompanying text.

missing, skeletal, or inaccurate lethal injection protocols.

Part VI discusses the author's study of the most current protocols for lethal injection in all thirty-six states where anesthesia is used for state executions. The Part first emphasizes the author's difficulty in acquiring protocols or information on incomplete protocols. Of those states with prison officials who agreed to submit a protocol to the author or who had a protocol publicly available (such as through a web site), only a limited number of protocols offered any details on the application of the lethal injection method itself in terms of key criteria, which include the following: (1) the amount of chemicals that are injected into the inmates, since the great majority of states used the standard three-injection chemicals (sodium thiopental, pancuronium bromide, and potassium chloride); (2) the preparation by the execution team for the lethal injection process; (3) the selection, training, and qualifications of the lethal injection team; (4) the involvement of medical personnel; (5) the extent to which guidelines are explicitly enumerated, written down, and made publicly available; (6) the availability of advice if there is a problem or a mistake during the execution procedure (for example, a tube becomes clogged), or instructions on how to revive an inmate if there is a stay in the execution; (7) the allowed or required presence of general witnesses or media witnesses; as well as (8) details on how the procedure is conducted and how much of it witnesses can see. When the protocols do provide details, such as the amount of chemicals that are injected, they oftentimes reveal ignorance and errors that heighten the likelihood that an execution will be botched. Such inaccurate or missing information suggests that states are not capable of executing an inmate humanely.

Part VII analyzes the paradoxical motivations behind legislative changes in execution methods. The Part notes that the conflicting goals of death penalty proponents and opponents alike ironically can merge when the topic is a switch in execution methods, particularly the move from electrocution to lethal injection. The Part illustrates these tensions and converges in the context of the 2001 federal execution of Timothy McVeigh. McVeigh's execution, which involved the traditional three-chemical lethal injection, was either too painless, humane enough, or too torturous, depending on the political eye and medical education of the observer.

As McVeigh's death indicates, execution procedures often have served as an underlying barometer of social attitudes toward the death penalty in general. Paradoxically, the seemingly serene and medically pristine application of lethal injection satisfies both friends and foes of the death penalty because it fuels the death penalty process for those who want it to continue, but also makes the process seem more humane for those who would like it to end. Perhaps Foucault would have agreed, however, that even though executions have become increasingly hidden from the public and therefore more politically acceptable, they have not become more humane, only more difficult to monitor.

This article contends that lethal injection appears to be unconstitutional given the science and faulty application of injections. However, the protocols are so sketchy,

and the procedure so covert, that legislatures and courts are able to turn a blind eye toward the consequences. Moreover, prison officials are wrongly delegated a degree of discretion for which they have no training and knowledge.

This article does not recommend that prison officials acquire an expertise for killing people. Rather, the goal is three-fold—to expose yet one more line of evidence showing the failures of the death penalty process, to provide a possible explanation for why such failures exist, and to detail the difficulties and paradoxes surrounding the attempts to resolve these problems. While death penalty proponents may believe that the increasing refinement of execution methods, irrespective of their humaneness, rightly perpetuates the death penalty, there are no legal or social standards that support this agenda. “The Court has *never* accepted the proposition that notions of deterrence or retribution might legitimately be served through the infliction of pain beyond that which is minimally necessary to terminate an individual’s life.”²⁴ Unfortunately, however, it seems that legislatures have accepted this proposition through irresponsible delegation.

II. THE EIGHTH AMENDMENT EXECUTION JURISPRUDENCE

A. *Current Methods of Execution and “Choice” States*

An analysis of the execution methods paradox requires some perspective on the current distribution of execution methods in this country. Table 1²⁵ lists the execution methods currently enacted in the thirty-eight death penalty states. Lethal injection now is the predominant method of execution; it is the sole method of execution in twenty-seven states and one of the two methods in each of the nine choice states.²⁶ Likewise, lethal injection executions far exceed the numbers of executions conducted by any other method.²⁷ In contrast, electrocution is the sole method of execution in only two states—Alabama and Nebraska—and legislatures in both states are now considering bills challenging its use.²⁸ Electrocution is an option in three of the choice states (Florida, South Carolina, and Virginia).²⁹ Hanging, the firing squad, and lethal gas are no longer the sole method of execution in any state.³⁰ Although each of these three methods is included as an option in two choice states, the methods are rarely

²⁴ *Glass v. Louisiana*, 471 U.S. 1080, 1084 (1985) (Brennan, J., dissenting from denial of certiorari); *see also Furman v. Georgia*, 408 U.S. 238, 392 (1972) (Burger, C.J., dissenting) (“The dominant theme of the Eighth Amendment debates was that the ends of the criminal laws cannot justify the use of measures of extreme cruelty to achieve them.”).

²⁵ *See infra* app. 1, tbl.1.

²⁶ *See infra* app. 1, tbl.1.

²⁷ *See infra* app. 1, tbls.4–7; *see also infra* notes 131–36 and accompanying text.

²⁸ *See infra* app. 2 (Alabama and Nebraska).

²⁹ *See infra* app. 1, tbl.1; app. 2 (Florida, South Carolina, and Virginia).

³⁰ *See infra* app. 1, tbl.1; app. 2.

used.³¹

However, this capsule of the current distribution of execution methods is not the end of the legislative story. The following sections of this article discuss the circuitous path that led up to it. The sections will focus first on electrocution because it was the most widely used execution method and challenges to it have had the strongest impact on legislative developments. Yet, this article examines most closely state uses of lethal injection in an effort to demonstrate how disturbingly errant legislative delegations of death continue to be.

B. *The Impact of Eighth Amendment Standards*

A striking oddity of the American death penalty is the Court's complete constitutional disregard for how inmates are executed. While the Court continually recognizes the Eighth Amendment hazards associated with prison conditions,³² it has never reviewed evidence on the constitutionality of execution conditions despite repeated, horrifying, and entirely preventable mishaps.³³ Indeed, the Court has recently agreed to hear challenges on the subject twice (involving California³⁴ and Florida³⁵), only to drop the cases after state legislatures have changed their methods of execution.³⁶

Explanations for these circumstances are baffling, yet one result seems clear: by refusing to acknowledge the problems with execution methods, the Court does not question the death penalty process itself. Moreover, states have aided this result through their systematic efforts to change to a new execution method whenever it

³¹ See *infra* app. 1, tbl.5 n.*, tbl.6 n.*.

³² See Denno, *Getting to Death*, *supra* note 1, at 321–27, 345–48.

³³ See generally Deborah W. Denno, *Adieu to Electrocution*, 26 OHIO N.U. L. REV. 665 (2000); Denno, *Getting to Death*, *supra* note 1; Denno, *Electrocution*, *supra* note 1.

³⁴ In *Fierro v. Gomez*, the Ninth Circuit unanimously held that California's statute authorizing execution by lethal gas was unconstitutionally cruel and unusual. 77 F.3d 301, 309 (9th Cir. 1996), *vacated on other grounds*, 519 U.S. 918 (1996) (remanding for reconsideration in light of the changed statute). *Fierro* marked the first time in this country's history that a federal appeals court had held any method of execution unconstitutional. *Id.* at 308 (stating that two circuit courts had found execution by lethal gas to be unconstitutional). Yet, the Court vacated the Ninth Circuit's holding that lethal gas was unconstitutional in light of the California legislature's subsequent amendment of the state's death penalty statute allowing lethal injection to be used unless the death row inmate specifically requested lethal gas. See *Gomez*, 519 U.S. at 918 (remanding for reconsideration in light of changed statute). In *Stewart v. LaGrand*, 526 U.S. 115 (1999), the Court held that the death row inmate waived his claim that execution by lethal gas violated the Eighth Amendment because the inmate chose to be executed by lethal gas rather than lethal injection. *Id.* at 118–19.

³⁵ See *infra* notes 99–102 and accompanying text (discussing *Bryan v. Moore*, 528 U.S. 960 (1999) and *Bryan v. Moore*, 528 U.S. 1133 (2000)).

³⁶ See *infra* app. 2 (California and Florida).

seems likely that their current method is constitutionally vulnerable.³⁷ Increasing adoption of lethal injection by the great majority of death penalty states is the most visible evidence of this constitutional sidestepping.³⁸

1. *An Historical Intertwining of Courts and Legislatures*

When the United States Constitution was being ratified, the Framers included in the Bill of Rights a prohibition of cruel and unusual punishments that was created expressly to proscribe the kinds of “torturous” and “barbarous” penalties associated with certain methods of execution.³⁹ To date, however, courts generally have provided only superficial and, at times, inaccurate Eighth Amendment review of the constitutionality of execution methods. Most commonly, courts dismiss the electrocution challenge entirely (often in one sentence) by relying on the century-old precedent of *In re Kemmler*.⁴⁰ In *Kemmler*, the Court held that the Eighth Amendment did not apply to the states and deferred to the New York legislature’s conclusion that electrocution was not a cruel and unusual punishment under the state’s Electrical Execution Act.⁴¹ Courts have mostly relied on *Kemmler* to dismiss challenges to the constitutionality of electrocution, although the case also has been used to bolster challenges to the other four types of execution methods.⁴²

Kemmler’s history, however, demonstrates how unique and problematic the case really is. The events surrounding *Kemmler* also suggest that political and financial forces outweighed the purported humanitarian concerns over how death row inmates were executed. For example, the New York Electrocution Act was a direct result of two major legislative events: (1) the Governor of New York’s 1885 message to the

³⁷ See Denno, *Getting to Death*, *supra* note 1, at 388–90.

³⁸ See *id.* at 363–72, 385–86.

³⁹ *Furman v. Georgia*, 408 U.S. 238, 263 (1972) (Brennan, J., concurring). The origin of the Eighth Amendment’s Cruel and Unusual Punishments Clause has been described in detail. See *Harmelin v. Michigan*, 501 U.S. 957, 973–79 (1991); *Furman*, 408 U.S. at 316–28 (1972) (Marshall, J., concurring); RAOUL BERGER, *DEATH PENALTIES: THE SUPREME COURT’S OBSTACLE COURSE* 29–58 (1982); Anthony F. Granucci, “*Nor Cruel and Unusual Punishments Inflicted*”: *The Original Meaning*, 57 CAL. L. REV. 839, 839–65 (1969) (examining the history of the Clause and the case law).

⁴⁰ 136 U.S. 436 (1890); see also Denno, *Getting to Death*, *supra* note 1, at 329–54; Denno, *Electrocution*, *supra* note 1, at 616–23.

⁴¹ *Kemmler*, 136 U.S. at 443.

⁴² Examples of such dismissals are categorized by execution method as follows. *Lethal gas*: *Hernandez v. State*, 32 P.2d 18, 24–25 (Ariz. 1934); *People v. Davis*, 794 P.2d 159, 173 (Colo. 1990); *State v. Kilpatrick*, 439 P.2d 99, 110 (Kan. 1968); *Calhoun v. State*, 468 A.2d 45, 70 (Md. 1983). *Lethal injection*: *People v. Stewart*, 528 N.E.2d 631, 639 (Ill. 1988); *Ex parte Granviel*, 561 S.W.2d 503, 510 (Tex. Crim. App. 1978). *Firing squad*: *People v. Anderson*, 493 P.2d 880, 890–91 (Cal. 1972); *Kilpatrick*, 439 P.2d at 110. *Hanging*: *Anderson*, 493 P.2d at 890; *DeShields v. State*, 534 A.2d 630, 640 (Del. 1987); *Kilpatrick*, 439 P.2d at 110.

legislature decrying the barbarity of hanging;⁴³ and (2) the Governor's appointment of a Commission to investigate "the most humane and practical method known to modern science" of carrying out executions.⁴⁴ Compelling evidence suggests that the Commission's ultimate recommendation of electrocution as the most humane method of effecting death was influenced heavily by a financial competition between Thomas Edison and George Westinghouse concerning whose current would dominate the electrical industry: Edison's DC current or Westinghouse's AC current.⁴⁵ Edison and his associates would have benefited by showing that George Westinghouse's AC current was so lethal it could kill someone. If AC current were applied in the electric chair, people would be afraid to use the current in their own homes.⁴⁶ Indeed, this Edison-Westinghouse rivalry existed within and throughout the New York Supreme Court's evidentiary hearings.⁴⁷ Yet, despite a cross-examination demonstrating Edison's ignorance of the effects of electrical currents on the human body as well as experimental results showing that electrocution did not quickly kill many of the animals tested, Edison's enormous reputation at the time outweighed revelation of his or any other expert's substantive flaws.⁴⁸ The New York legislature adopted electrocution and, with time, the medical community recommended AC current in particular.⁴⁹

2. *A Lack of Proper Precedent*

For a range of reasons, *Kemmler's* precedential value has diminished substantially over the last century. First, the *Kemmler* Court never specifically employed the Eighth Amendment's Cruel and Unusual Punishments Clause even though post-incorporation cases have continued mistakenly to cite *Kemmler* as an

⁴³ In 1885, the Governor of New York announced in his annual message to the legislature that:

[t]he present mode of executing criminals by hanging has come down to us from the dark ages, and it may well be questioned whether the science of the present day cannot provide a means for taking the life of such as are condemned to die in a less barbarous manner.

Kemmler, 136 U.S. at 444.

⁴⁴ 1886 N.Y. Laws ch. 352, § 1.

⁴⁵ CRAIG BRANDON, *THE ELECTRIC CHAIR: AN UNNATURAL AMERICAN HISTORY* 67–88 (1999); Denno, *Electrocution*, *supra* note 1, at 568–73.

⁴⁶ Denno, *Electrocution*, *supra* note 1, at 571.

⁴⁷ See BRANDON, *supra* note 45, at 89–133; Denno, *Electrocution*, *supra* note 1, at 577–83. Edison testified that death by electrocution would be quick and painless and that electricity would not mutilate the victim's body. In contrast, Westinghouse reportedly financed William Kemmler's appeal at a cost exceeding \$100,000. Both Edison and Westinghouse also relied on a series of experiments testing the effects of electrocution on animals, albeit emphasizing differing results. BRANDON, *supra* note 45, at 89–133; Denno, *Electrocution*, *supra* note 1, at 573–83.

⁴⁸ Denno, *Electrocution*, *supra* note 1, at 580–81.

⁴⁹ *Id.* at 574–77.

Eighth Amendment case.⁵⁰ Next, the *Kemmler* Court adopted an unusually stringent burden of proof standard⁵¹ that has not been used since in death penalty cases.⁵² Moreover, a court reviewing electrocution under the Eighth Amendment would not defer to the state's legislature to the same extent as the *Kemmler* Court.⁵³ Most critically, because *Kemmler* was decided before anyone had been electrocuted, the Court had limited evidence in reaching its conclusion apart from the law, science, and politics of the time.⁵⁴

Scientifically, William Kemmler's 1890 electrocution failed. The media reported in graphic detail the confusion and mistakes that surrounded the executioners' attempts to regulate the newly tried electric chair, as well as the physical violence and mutilation that Kemmler experienced.⁵⁵ Regardless, Kemmler's mishap was a blight

⁵⁰ See Denno, *Getting to Death*, *supra* note 1, at 334. For examples of cases that incorrectly state that *Kemmler* analyzed and applied the Eighth Amendment, see, for example, *McCleskey v. Kemp*, 481 U.S. 279, 299 (1987); *Johnson v. Glick*, 481 F.2d 1028, 1031 (2d Cir. 1973); *Bailey v. Lally*, 481 F. Supp. 203, 218 (D. Md. 1979); *Thompson v. State*, 542 So. 2d 1286, 1298 (Ala. Crim. App. 1988), *aff'd*, 542 So. 2d 1300 (Ala. 1988).

⁵¹ The New York courts had required the prisoner to show "beyond doubt" that the execution method was cruel and unusual. *In re Kemmler*, 136 U.S. 436, 442 (1890).

⁵² Courts, such as *Provenzano v. Moore*, typically fail to identify the burden of proof when reviewing the constitutionality of execution methods. 744 So. 2d 413, 416–19 (Fla. 1999) (*per curiam*). However, the burden of proof that courts cite most frequently—preponderance of the evidence—is far less stringent than the "beyond doubt" standard stated in *Kemmler*. See Denno, *Getting to Death*, *supra* note 1 at 335; see also *Walton v. Arizona*, 497 U.S. 639, 649–51 (1990) (plurality opinion) (upholding Arizona's imposition on defendants the burden of establishing, "by a preponderance of the evidence, the existence of mitigating circumstances sufficiently substantial to call for leniency" in order to avoid the death penalty after the establishment of one or more aggravating factors); *Blake v. Hall*, 668 F.2d 52, 57 (1st Cir. 1981) (determining that plaintiffs had failed to establish by "a fair preponderance of the evidence" that cell conditions at a prison constituted cruel and unusual punishment); *McGill v. Duckworth*, 726 F. Supp. 1144, 1148–49 (N.D. Ind. 1989) (discussing the applicability of the preponderance of the evidence standard in suits against prison officials for failing to protect a prison inmate from attack by another inmate), *aff'd in part and rev'd in part*, 944 F.2d 344 (7th Cir. 1991); *Martin v. Foti*, 561 F. Supp. 252, 257 (E.D. La. 1983) (noting that plaintiffs had "failed to show by a preponderance of the evidence" that conditions were cruel and unusual).

⁵³ See *Kemmler*, 136 U.S. at 442–43 (quoting the New York Supreme Court's explanation of why it deferred to the legislature).

⁵⁴ See generally BRANDON, *supra* note 45; Denno, *Electrocution*, *supra* note 1, at 559–607.

⁵⁵ See generally BRANDON, *supra* note 45, at 160–204. A *New York Times* reporter's account of Kemmler's August 6, 1890, execution explains some of the problems that occurred:

After the first convulsion there was not the slightest movement of Kemmler's body. . . . Then the eyes that had been momentarily turned from Kemmler's body returned to it and gazed with horror on what they saw. The men rose from their chairs impulsively and groaned at the agony they felt. "Great God! he is alive?" some one said; "Turn on the current," said another. . . .

Again came that click as before, and again the body of the unconscious wretch in the chair became as rigid as one of bronze. It was awful, and the witnesses were so horrified by

on the memory of state legislatures. Electrocution quickly became a popular means of execution in other states, despite comparable reports of mishaps and botches.⁵⁶ It appeared that the desire to perpetuate the death penalty outweighed any humanitarian goal to switch to a new method or to stop executions entirely.⁵⁷ Consequently, the Court relied on *Kemmler* decades later in *Malloy v. South Carolina*⁵⁸ and in *Louisiana ex rel. Francis v. Resweber*⁵⁹ to fuel states' uses of electrocution in the face of new kinds of legal challenges.

C. The Modern Development of Eighth Amendment Standards

Since 1962, when the Court held in *Robinson v. California*⁶⁰ that the Eighth Amendment applies to the states,⁶¹ the Court's Eighth Amendment doctrine has emphasized an "evolving standard of decency" of cruel and unusual punishment.⁶²

the ghastly sight that they could not take their eyes off it. The dynamo did not seem to run smoothly. The current could be heard sharply snapping. Blood began to appear on the face of the wretch in the chair. It stood on the face like sweat. . . . An awful odor began to permeate the death chamber, and then, as though to cap the climax of this fearful sight, it was seen that the hair under and around the electrode on the head and the flesh under and around the electrode at the base of the spine was singeing. The stench was unbearable.

Far Worse Than Hanging, N.Y. TIMES, Aug. 7, 1890, at 1. For a fascinating historical account of the press's attempts to cover executions in New York, see Michael Madow, *Forbidden Spectacle: Executions, the Public and the Press in Nineteenth Century New York*, 43 BUFF. L. REV. 461 (1995).

⁵⁶ See BRANDON, *supra* note 45, at 205-43; Denno, *Electrocution*, *supra* note 1, at 598-676.

⁵⁷ See Denno, *Getting to Death*, *supra* note 1, at 388-94.

⁵⁸ 237 U.S. 180, 185 (1915) (concluding that the State's implementation of death through electrocution, rather than hanging, did not increase the punishment of murder but only changed its mode).

⁵⁹ 329 U.S. 459 (1947) (plurality opinion). In *Francis*, the issue was not whether electrocution was per se unconstitutional, but whether the State of Louisiana could constitutionally execute the appellant after the electric chair had malfunctioned during the first attempt. *Id.* at 461. In examining the circumstances of *Francis* "under the assumption, but without so deciding" that the Eighth Amendment applied, a plurality of four Justices interpreted the Cruel and Unusual Punishments Clause as prohibiting only the "inflict[ion of] unnecessary pain," not the suffering created in an "unforeseeable accident." *Id.* at 462, 464. The Justices thus assumed that state officials performed "their duties . . . in a careful and humane manner." *Id.* at 462. Justice Frankfurter explained, however, that his deciding fifth vote did "not mean that a hypothetical situation, which assumes a series of abortive attempts at electrocution . . . would not raise different questions." *Id.* at 471 (Frankfurter, J., concurring).

⁶⁰ 370 U.S. 660 (1962).

⁶¹ *Id.* at 666. In *Furman v. Georgia*, Justice Douglas relied on both *Robinson* and *Francis* to conclude that the Eighth Amendment's applicability to the states is "now settled." 408 U.S. 238, 241 (1972) (per curiam) (Douglas, J., concurring).

⁶² *Trop v. Dulles*, 356 U.S. 86, 101 (1985) (plurality opinion); see also *Stanford v. Kentucky*, 492 U.S. 361, 369 (1989); Denno, *Getting to Death*, *supra* note 1, at 337-38.

This evolution occurs because “[t]ime . . . brings into existence new conditions and purposes. Therefore, a principle to be vital must be capable of wider application than the mischief which gave it birth.”⁶³ For these reasons, the Court has viewed the Eighth Amendment “in a flexible and dynamic manner,”⁶⁴ recognizing that the Clause “draw[s] its meaning from the evolving standards of decency that mark the progress of a maturing society.”⁶⁵ Current claims of cruel and unusual punishment must therefore be assessed “in light of contemporary human knowledge.”⁶⁶

Aspects of *Kemmler* coincide with the “evolving standards of decency” jurisprudence. Although scientific evidence does not support the *Kemmler* Court’s factual assumptions regarding the acceptability of electrocution,⁶⁷ one of the *Kemmler* Court’s legal conclusions remains viable: “Punishments are cruel when they involve torture or a lingering death . . . something more than the mere extinguishment of life.”⁶⁸

In conjunction with the “evolving standards of decency” and “torture and lingering death” guideposts, some courts also have considered whether a particular state’s execution methods statute is unconstitutionally vague.⁶⁹ This approach

⁶³ *Weems v. United States*, 217 U.S. 349, 373 (1910).

⁶⁴ *Stanford*, 492 U.S. at 369 (quoting *Gregg v. Georgia*, 428 U.S. 153, 171 (1976)).

⁶⁵ *Trop*, 356 U.S. at 101.

⁶⁶ *Robinson v. California*, 370 U.S. 660, 666 (1962).

⁶⁷ See, e.g., *Poyner v. Murray*, 508 U.S. 931, 933 (1993) (Souter, J., joined by Blackmun & Stevens, JJ., concurring in denial of certiorari) (emphasizing that *Kemmler* was not “a dispositive response to litigation of the issue [of the constitutionality of electrocution] in light of modern knowledge”).

⁶⁸ *In re Kemmler*, 136 U.S. 436, 447 (1890).

⁶⁹ For a discussion of how courts have assessed whether a state’s particular execution method is unconstitutionally vague, see *infra* notes 73, 247, 273–74, 282–83, 357 and accompanying text. These unconstitutionally vague statute cases have focused primarily on lethal gas and lethal injection, discussed *infra* notes 247, 273–74, 282–83, 357 and accompanying text (lethal injection cases). The lethal gas cases are examined briefly in this footnote because challenges to the vagueness of lethal gas statutes have provided precedent for the challenges to the vagueness of lethal injection statutes. Regardless, no court has upheld a statutory vagueness challenge. For example, in *State v. Gee Jon*, 211 P. 676, 682 (Nev. 1923), the court emphasized two points: (1) the legislature “sought to provide a method of inflicting the death penalty in the most humane manner known to modern science,” *id.*; see also Robert A. Maurer, *Death by Lethal Gas*, 9 GEO. L.J. 50, 51 (1921) (noting that “it would appear that the Nevada statute would be upheld as another attempt by a legislature to find a still more humane method of execution than by electrocution and the other methods now in use”); and (2) prison officials administering the gas would also “carefully avoid inflicting cruel punishment” when selecting the type of gas to use, because it was unspecified in the statute. See *Gee Jon*, 211 P. at 682; see also *Hernandez v. State*, 32 P.2d 18, 25 (Ariz. 1934) (“The fact that [lethal gas] is less painful and more humane than hanging is all that is required to refute completely the charge that it constitutes cruel and unusual punishment.”); *People v. Daugherty*, 256 P.2d 911, 922 (Cal. 1953) (declining defendant’s contention that lethal gas is cruel and unusual because executioners “could use a lethal gas which would cause long and cruel suffering”); Raymond Hartmann, *The Use of Lethal Gas in Nevada Executions*, 8 ST. LOUIS U. L.J.

recognizes that all three levels of decision makers (legislatures, courts, and prison personnel) are simultaneously involved in execution procedures, but that legislatures could play a greater role in either guiding or curtailing prison personnel's discretion in implementing executions.

Currently, five states can still apply electrocution. Two states use electrocution as their sole method of execution⁷⁰ and three states allow the condemned a choice between electrocution and lethal injection.⁷¹ Yet, not one of these five states provides information on the voltage or amperage of the electrical current that should be applied, nor the way that current should be administered. Three of the five states specify nothing more than "death or punishment by electrocution."⁷²

Overall, the electrocution statutes alone provide insufficient information to assess whether electrocution meets Eighth Amendment standards.⁷³ For that reason, this article focuses more directly on the behavior of prison officials.

The Court's Eighth Amendment jurisprudence suggests four interrelated criteria for determining the constitutionality of an execution method: (1) "the unnecessary and wanton infliction of pain";⁷⁴ (2) "nothing less than"⁷⁵ human dignity (for example, "a minimization of physical violence during execution"⁷⁶); (3) the risk of

167, 168 (1923) (expressing support for the Nevada statute despite concerns that the lack of specification for the type of gas might introduce error on the part of prison officials, who may inadvertently select a type of gas that would inflict pain and suffering).

⁷⁰ The two states are Alabama and Nebraska. ALA. CODE § 15-18-82(a) (1975) ("[T]he sentence shall be executed . . . by causing to pass through the body of the convict a current of electricity of sufficient intensity to cause death, and the application and continuance of such current through the body of such convict shall continue until such convict is dead."); NEB. REV. STAT. § 29-2532 (1943) ("[Death] shall be by causing to pass through the body . . . a current of electricity of sufficient intensity to cause death."); *see also infra* app. 1, tbl.1; app. 2 (Alabama and Nebraska).

⁷¹ The three states—Florida, South Carolina, and Virginia—allow a choice between electrocution and lethal injection. *See infra* app. 1, tbl.1; app. 2 (Florida, South Carolina, and Virginia). Only the electrocution provisions in their respective statutes are cited here. *See* FLA. STAT. ANN. § 922.105(1) (West 2000) ("A death sentence shall be executed by lethal injection, unless the person sentenced to death affirmatively elects to be executed by electrocution."); S.C. CODE ANN. § 24-3-530 (A) (Law Co-op. 1993) (amended 1995) ("[The condemned] shall suffer the [death] penalty by electrocution . . ."); VA. CODE ANN. § 53.1-233 (Michie 1994) ("The death chamber shall have all the necessary appliances for the proper execution of prisoners by electrocution."). Arkansas allows pre-enactment prisoners a choice between electrocution and lethal injection. *See infra* app. 1, tbl.10 (Type 4—Arkansas). However, only two inmates remain who can make that choice. *See infra* app. 2 (Arkansas). Because of the limited potential for the use of electrocution in Arkansas, this article does not consider Arkansas a choice state.

⁷² *See supra* note 71 (The three states are Florida, South Carolina, and Virginia.).

⁷³ *See* Denno, *Getting to Death, supra* note 1, at 352–53 (reviewing the issue of statutory vagueness in the context of electrocution statutes).

⁷⁴ *Gregg v. Georgia*, 428 U.S. 153, 173 (1976); *Louisiana ex rel. Francis v. Resweber*, 329 U.S. 459, 463 (1947) (plurality opinion).

⁷⁵ *Trop v. Dulles*, 356 U.S. 86, 100 (1958) (plurality opinion).

⁷⁶ *Glass v. Louisiana*, 471 U.S. 1080, 1085 (1985) (Brennan, J., dissenting).

“unnecessary and wanton infliction of pain”;⁷⁷ and (4) “evolving standards of decency” as measured by “objective factors to the maximum extent possible,”⁷⁸ such as legislation passed by elected representatives⁷⁹ or public attitudes.⁸⁰ However, no court has reviewed the constitutionality of electrocution or lethal injection under modern Eighth Amendment standards that consider, as a substantial part of an “evolving standards of decency” analysis, legislative trends and related information, such as public opinion polls and execution protocols. The next Part of this article briefly attempts such an analysis.

III. A MODERN EIGHTH AMENDMENT ANALYSIS OF ELECTROCUTION

The Court’s modern Eighth Amendment jurisprudence suggests that pain is only one of a range of factors used to evaluate whether an execution method constitutes cruel and unusual punishment. This Part discusses the pain and physical violence of electrocution but then focuses on other Eighth Amendment criteria, especially the strong showing of legislative trends away from electrocution. The legislative trend criterion has been the most strongly ignored by courts, but is perhaps the most critical now.

A. Electrocution Constitutes the “Unnecessary and Wanton Infliction of Pain”

The Court set forth general principles gauging what can be considered proper measures of excessive pain; however, other courts have provided substantially more detail. For example, in an effort to determine if an inmate experienced “unnecessary and wanton infliction of pain” while conscious, the Ninth Circuit has supported

⁷⁷ *Farmer v. Brennan*, 511 U.S. 825, 842 (1994) (in terms of a standard of deliberate indifference, referring to a risk that is “longstanding, pervasive, well-documented, or expressly noted by prison officials in the past, and the circumstances suggest that the defendant-official . . . had been exposed to information concerning the risk and thus ‘must have known about it.’”). Even though the *Farmer* Court’s standard pertains to the risk of inmate attacks, the Court did not suggest that the standard should be limited only to this circumstance. Furthermore, the likelihood of a botched execution can be estimated far more accurately than the likelihood of an inmate attack, given that the former is based on more readily identifiable and objective criteria. See also *Glass*, 471 U.S. at 1093 (Brennan, J., dissenting) (noting that even if electrocution did not “invariably produce pain and indignities, the apparent century-long pattern of ‘abortive attempts’ and lingering deaths suggests that this method of execution carries an unconstitutionally high risk of causing such atrocities”).

⁷⁸ *Stanford v. Kentucky*, 492 U.S. 361, 369 (1989) (quoting *Coker v. Georgia*, 433 U.S. 584, 592 (1977) (plurality opinion)).

⁷⁹ *Fierro v. Gomez*, 865 F. Supp. 1387, 1410 (N.D. Cal. 1994), *aff’d*, 77 F.3d 301 (9th Cir. 1996), *vacated on other grounds*, 519 U.S. 918 (1996) (remanding for reconsideration in light of the changed statute).

⁸⁰ *Fierro*, 865 F. Supp. at 1400–01.

consideration of a wide range of evidence, including scientific research and eyewitness accounts of actual executions.⁸¹

The most recent research and eyewitness observations suggest that many factors associated with electrocution, such as severe burning, boiling body fluids, asphyxiation, and cardiac arrest, can cause extreme pain when unconsciousness is not instantaneous.⁸² Table 8⁸³ lists brief summaries of nineteen botched electrocutions following *Gregg v. Georgia*,⁸⁴ when the Court ended its moratorium on the death penalty.⁸⁵ These botches provide considerable evidence that prisoners can experience extensive pain and suffering even when the electrocution is routine or “properly performed.”⁸⁶

On July 8, 1999, perhaps the most notorious botched electrocution occurred when Allen Lee Davis’s execution in Florida’s electric chair went terribly awry—an event that garnered worldwide notice and condemnation.⁸⁷ The Florida Supreme Court’s color photos of the executed Davis (posted on the Internet as part of a case appendix)⁸⁸ received so many “hits” from the several millions of interested viewers

⁸¹ *Fierro v. Gomez*, 77 F.3d 301, 308 (9th Cir. 1996), *vacated on other grounds*, 519 U.S. 918 (1996) (remanding for reconsideration in light of the changed statute). Given the scientific uncertainty concerning measurements of pain and unconsciousness, the *Fierro* district court found to be probative, “to varying degrees,” all the evidence of eyewitness observations of gas chamber executions. *Fierro v. Gomez*, 865 F. Supp. 1387, 1400 (N.D. Cal. 1994). The court particularly considered as “objective” and “reliable sources of clinical information,” the San Quentin execution records produced contemporaneously with the actual executions by trained medical personnel closely observing the inmates. *Id.* at 1400–01. The execution records of two recently executed inmates were deemed “the most probative evidence of pain and consciousness” because the men were executed under the protocol being challenged. *Id.* at 1401.

⁸² See Denno, *Getting to Death*, *supra* note 1, at 354–58 (summarizing available medical publications, eyewitness reports, and affidavit testimony).

⁸³ See *infra* app. 1, tbl.8.

⁸⁴ 428 U.S. 153 (1976).

⁸⁵ *Id.* at 168–207.

⁸⁶ Sherwin B. Nuland, M.D., *Cruel and Unusual*, N.Y. TIMES, Nov. 9, 1999, at A25 (“Even when it functions exactly as it should, the electric chair is a brutal killer.”). See generally SHERWIN B. NULAND, *HOW WE DIE: REFLECTIONS ON LIFE’S FINAL CHAPTER* (1993) (discussing different methods of death and the pain associated with them).

⁸⁷ *Amnesty Calls for Death Penalty Abolition, Following Grisly Execution*, AGENCE FRANCE-PRESSE (Paris, Fr.), July 9, 1999, at 1; Joe Carroll, *US Death Sentence Ruling Defies Ratified UN Treaty*, IRISH TIMES (Dublin, Ir.), Nov. 3, 1999, at 12; Roberta Harrington, *Death Penalty Debate Sparked*, SUNDAY HERALD (Glasgow, Scot.), Nov. 28, 1999, at 16; Julie Hauserman, *Lethal Injection is Signed into Law*, ST. PETERSBURG TIMES, Jan. 5, 2000, at 1A; *Madrid Demonstrators Protest Death Sentence*, PRESS JOURNAL (Vero Beach, Fla.), Nov. 3, 1999, at A11; *Millions Flock to US Execution Site*, THE SCOTSMAN (Edinburgh, Scot.), Nov. 1, 1999, at 22; Michael Peltier, *Death Pictures Pique Interest Worldwide*, PRESS JOURNAL (Vero Beach, Fla.), Oct. 25, 1999, at A8; David Usborne, *Is the End in View for Old Sparky?*, THE INDEPENDENT (London, Eng.), Jan. 9, 2000, at 20.

⁸⁸ *Provenzano v. Moore*, 744 So. 2d 413, 442–44 (Fla. 1999) (Shaw, J., dissenting).

that the court's computer system crashed and was disabled for months afterwards.⁸⁹

The photos and witnesses' testimony detailed the horror. Davis suffered deep burns on his head, face, and body, as well as a nosebleed that poured blood down his face and shirt. More troubling was evidence that Davis was partially asphyxiated before and during the electrocution from the five-inch-wide mouth strap that belted him to the chair's head-rest.⁹⁰ There also was testimony that, after guards placed the mouth strap on him, Davis's face became red and he tried to get the guards' attention by making sounds⁹¹—noises described by witnesses as "'screams,' 'yells,' 'moans,' 'high-pitched murmurs,' 'squeals,' or 'groans,' or like 'a scream with someone having something over their—their mouth.'"⁹² Execution team members stated that they "ignored" Davis's noises, however, because those kinds of sounds "were not unusual during an electrocution."⁹³ In the post-execution photos taken by Department of Corrections personnel,

a sponge placed under [Davis's] head-piece obscures the top portion of his head down to his eyebrows; because of the width of the mouth-strap, only a small portion of Davis' face is visible above the mouth-strap and below the sponge, and that portion is bright purple and scrunched tightly upwards; his eyes are clenched shut and his nose is pushed so severely upward that it is barely visible above the mouth-strap. . . .⁹⁴

Thomas Provenzano, who was scheduled to be executed in Florida State Prison the next day, filed a petition with the Florida Supreme Court seeking a stay of execution and argued that the state's electric chair was cruel and unusual punishment. The Florida Supreme Court remanded Provenzano's case to the circuit court to conduct an evidentiary hearing on the constitutionality of Florida's electric chair. After the hearing, the circuit court held that electrocution in Florida's electric chair "is not unconstitutional."⁹⁵ In *Provenzano v. Moore*, a 4–3 *per curiam* opinion, a plurality of the Florida Supreme Court affirmed in three pages the circuit court's "finding that the electric chair is not unconstitutional."⁹⁶ Moreover, the plurality reiterated its previous holding in *Jones v. State*⁹⁷ that had rejected the claim that Florida's use of electrocution violated "evolving standards of decency."⁹⁸ The court

⁸⁹ *Millions Flock to US Execution Site*, *supra* note 87; Peltier, *supra* note 87; Osborne, *supra* note 87.

⁹⁰ *Provenzano*, 744 So. 2d at 433–34 (Shaw, J., dissenting).

⁹¹ *Id.*

⁹² Brief for Petitioner at 3, *Bryan v. Moore*, 528 U.S. 960 (1999) (citations omitted).

⁹³ *Id.*

⁹⁴ *Provenzano*, 744 So. 2d at 434 (Shaw, J., dissenting).

⁹⁵ *Id.* at 416.

⁹⁶ *Id.*

⁹⁷ 701 So. 2d 76, 79 (Fla. 1997).

⁹⁸ *Provenzano*, 744 So. 2d at 415.

implied there was no need to readdress the “evolving standards of decency” issue.

In *Provenzano*, the Florida Supreme Court’s skeletal *per curiam* opinion virtually ignored the great bulk of the Court’s Eighth Amendment jurisprudence. Therefore, the Florida Supreme Court effectively begged the question of electrocution’s continued propriety under an “evolving standards of decency” test.

In granting certiorari to review the issue in *Bryan v. Moore*,⁹⁹ the Court defied history and expectations. For the first time ever, it seemed willing to consider arguments concerning whether execution by electrocution in any state—in this case Florida—violated the Eighth Amendment’s Cruel and Unusual Punishments Clause.¹⁰⁰ The Court ultimately dismissed its certiorari grant in light of the Florida legislature’s decision to switch to lethal injection.¹⁰¹ Regardless, *Bryan* signifies the beginning of the final end to electrocution. *Bryan* also has fueled comparable constitutional challenges in the two remaining electrocution states, Alabama and Nebraska.¹⁰²

Because the *Provenzano* court disregarded much of the existing Eighth Amendment jurisprudence, the *Bryan* Court’s failure to provide guidance for evaluating execution methods leaves open the possibility that additional factors influenced the Court’s decision to grant certiorari. As in *Provenzano*, other courts also have engaged in brief Eighth Amendment reviews that focus predominantly on the amount of pain inflicted while ignoring alternative Eighth Amendment standards.

B. *Electrocution Constitutes “Physical Violence” and Offends “Human Dignity”*

Much of the attention directed toward Allen Lee Davis’s execution concerned not only the pain he might have experienced but, without question, the mutilation that occurred when he and others before him were electrocuted. Evidence of mutilation resulting from electrocution is derived from three sources: (1) post-execution autopsies, which are required in some states; (2) observations provided by experts; and (3) witnesses’ descriptions of executions, some of which are detailed in Table 8.¹⁰³ The effects of electrocution on the human body include the following: charring

⁹⁹ 528 U.S. 960 (1999).

¹⁰⁰ *Id.* However, it was unclear why the Court made such a move after all these years. There were a range of views: (1) the Court wanted to declare electrocution constitutional once and for all, to end the seemingly ceaseless stream of appeals challenging the method’s constitutionality over the years; (2) the Court in particular wanted to examine the constitutionality of Allen Lee Davis’s execution in light of Florida’s history of botched executions; or (3) the Court wanted to examine whether electrocution in general, as well as applied specifically in Florida, was constitutional. This broad scope necessitated a sufficiently wide focus for challenging the constitutionality of electrocution, beginning with the method’s history.

¹⁰¹ *Bryan v. Moore*, 528 U.S. 1133 (2000); *see infra* app. 2 (Florida).

¹⁰² *See infra* app. 2 (Alabama and Nebraska).

¹⁰³ *See infra* app. 1, tbl.8.

of the skin and severe external burning, such as the possible burning away of the ear; exploding of the penis; defecation and micturition, which necessitate that the condemned person wear a diaper; drooling and vomiting; blood flowing from facial orifices; intense muscle spasms and contractions; odors resulting from the burning of the skin and the body; and extensive sweating and swelling of skin tissue.¹⁰⁴

Similar to Allen Lee Davis's execution, for example, the execution of Wilbert Lee Evans in Virginia resulted in substantial bleeding; blood poured from Evans's eyes and nose, drenching his shirt. Moreover, the flames witnessed during the 1990 execution of Jesse Joseph Tafero and the 1997 execution of Pedro Medina made the public explicitly aware of how a human body could be burned and distorted during an electrocution.¹⁰⁵

C. Electrocution Constitutes the Risk of "Unnecessary and Wanton Infliction of Pain"

When legislatures or courts validate the use of electrocution, it is implied that prison officials will perform executions properly and that equipment will not malfunction. A focus on electrocutions in all states and over time, however, reveals the potential for prison personnel to contribute to a risk of unnecessary pain.

In 1990, for example, Jesse Tafero's botched electrocution in Florida suggested there was a substantial likelihood the state's execution procedure could result in severe pain and prolonged agony. Subsequently, a pattern of consecutive malfunctions has been established with the botched Florida electrocutions of Pedro Medina and, now, Allen Lee Davis. Tafero's and Medina's executions shared similar problems (most particularly difficulties with the headset sponge), that created the flames, smoke, smell, and burning in both executions.¹⁰⁶ Notably, both of their executions closely resembled William Kemmler's over a century ago.¹⁰⁷ The new set of problems accompanying Davis's execution suggests that a continuing pattern of botches is highly foreseeable. Indeed, a pattern of consecutive botching also occurred in Virginia even after the state rewired the electric chair due to prior botching. These problems prompted Virginia to allow inmates a choice between electrocution and lethal injection.¹⁰⁸

D. Electrocution Contravenes "Evolving Standards of Decency"

Legislative trends are an established way to measure "evolving standards of

¹⁰⁴ See Denno, *Getting to Death*, *supra* note 1, at 359.

¹⁰⁵ See *infra* app. 1, tbl.8.

¹⁰⁶ See *infra* app. 1, tbl.8.

¹⁰⁷ See *supra* note 55 and accompanying text.

¹⁰⁸ See Denno, *Getting to Death*, *supra* note 1, at 362 & n.262.

decency.”¹⁰⁹ Yet, courts, such as *Provenzano*,¹¹⁰ have ignored such trends when they have evaluated the constitutionality of electrocution. A thorough assessment of this aspect of the Court’s Eighth Amendment jurisprudence should consider legislative changes in execution methods in all states over the course of the twentieth century, starting with the New York legislature’s 1888 selection of electrocution.

1. *The Marked Legislative Trends Away from Electrocution*

Legislative trends from 1888–2001 show three general patterns in the use of the five available execution methods in the United States. First, most state legislatures presumably change from one method of execution to another or to a “choice” between a state’s old method of execution and lethal injection for humanitarian reasons, most typically because there have been problems with the method. However, other factors, such as cost, also are considered. Second, legislatures demonstrate a fairly consistent pattern of movement from one method of execution to another, suggesting that states take notice of the methods used, and the difficulties encountered, by other states. Third, since 1977, when lethal injection was first introduced, no state has changed to, or included as an additional “choice,” any other method of execution but lethal injection. In general, states’ changes in execution methods have occurred in the following order: from hanging to electrocution to lethal gas to lethal injection. The firing squad has been used sporadically in only a few states.¹¹¹

In 1853, hanging, the “nearly universal form of execution,” was used in forty-eight states and territories.¹¹² Nearly four decades later, however, concerns over the barbarity of hanging and the subsequent advent of electrocution prompted states to change their method of execution from hanging to electrocution.¹¹³ Even though the first electrocutions were grotesquely botched,¹¹⁴ by 1913, a total of thirteen states had changed to electrocution as a result of “a well-grounded belief that electrocution is less painful and more humane than hanging.”¹¹⁵ By 1949, twenty-six states had changed to electrocution, the largest number of states that had ever used electrocution

¹⁰⁹ See *supra* notes 78–79; *infra* notes 126–30, 154 and accompanying text.

¹¹⁰ 744 So. 2d 413 (Fla. 1999) (per curiam).

¹¹¹ Denno, *Getting to Death*, *supra* note 1, at 363–408, 439–64; see *infra* app. 1, tbls.2–3; app. 2.

¹¹² *Campbell v. Wood*, 511 U.S. 1119, 1119 (1994) (Blackmun, J., dissenting from denial of certiorari) (citing *State v. Frampton*, 627 P.2d 922, 934 (Wash. 1981)).

¹¹³ See *supra* notes 43, 56 and accompanying text.

¹¹⁴ See *supra* notes 55–56 and accompanying text.

¹¹⁵ *Malloy v. South Carolina*, 237 U.S. 180, 185 (1915) (noting the adoption of electrocution by eleven states following the decision of a New York commission that it was more humane, making the total number of states adopting electrocution thirteen, including the state at issue, South Carolina).

at the same time.¹¹⁶ Since 1949, however, no state legislature has selected electrocution as its method of execution.¹¹⁷

It appears that states stopped adopting electrocution initially because of the greater appeal of lethal gas. In 1921, Nevada was the first state to switch from its prior methods (hanging and shooting) to lethal gas in accordance with the state's new Humane Death Bill.¹¹⁸ By 1955, eleven states were using lethal gas and twenty-two states were using electrocution. By 1973, twelve states were using lethal gas and twenty states were using electrocution. Since 1973, however, no state has selected lethal gas as a method of execution.¹¹⁹

With each new lethal gas statute came controversy and constitutional challenges, both before and after the Court's moratorium on capital punishment in *Furman v. Georgia*.¹²⁰ By 1994, there was a "national consensus" concluding that lethal gas was not an acceptable method of execution because of the cruelty involved.¹²¹ Lethal gas continues to be available for use for executions in two states (California and Missouri),¹²² and it continues to be controversial.

Recent research indicates that there is an even more striking national consensus rejecting electrocution. Since 1973, twelve states have abandoned lethal gas as their exclusive method of execution.¹²³ By contrast, since 1949, twenty-one states have abandoned electrocution as either an exclusive or choice method of execution.¹²⁴ Moreover, nine (or nearly one-half) of these states dropped electrocution in the last six years.¹²⁵

¹¹⁶ See *infra* app. 1, tbl.2; app. 2.

¹¹⁷ See *infra* app. 1, tpls.2-3; app. 2.

¹¹⁸ In 1921, in an attempt to prove the state humane, the Nevada legislature passed a law providing that lethal gas was to be administered "without warning and while [the inmate was] asleep in his cell." WILLIAM J. BOWERS, *LEGAL HOMICIDE: DEATH AS PUNISHMENT IN AMERICA, 1864-1982*, at 12 (1984). This procedure was never followed, however, because it was impossible to release the gas in a regular cell. *Id.* Yet, in *State v. Gee Jon*, the Nevada Supreme Court emphasized that the legislature "sought to provide a method of inflicting the death penalty in the most humane manner known to modern science." 211 P. 676, 682 (Nev. 1923). The legislature evaluated, but rejected, hanging and shooting in favor of lethal gas. *Id.* The 1921 lethal gas law did not expressly indicate retroactive operation. *Id.* at 681-82.

¹¹⁹ Denno, *Getting to Death*, *supra* note 1, at 366-67; see *infra* app. 2.

¹²⁰ 408 U.S. 238, 256-57 (1972) (holding that the discretionary statutes were unconstitutional as applied, violating the Equal Protection Clause). For an overview of these challenges, see Denno, *Getting to Death*, *supra* note 1, at 367-68.

¹²¹ Denno, *Getting to Death*, *supra* note 1, at 368.

¹²² See app. 1, tbl.1; app. 2 (California and Missouri).

¹²³ Denno, *Getting to Death*, *supra* note 1, at 368-70.

¹²⁴ These states are, in order of abandonment: Oklahoma (1951), Mississippi (1954), New Mexico (1955), Texas (1977), Massachusetts (1982), Arizona (1983), Illinois (1983), New Jersey (1983), South Dakota (1984), Louisiana (1990), Pennsylvania (1990), Ohio (1993, 2001), Virginia (1994), Connecticut (1995), Indiana (1995), New York (1995), South Carolina (1995), Kentucky (1998), Tennessee (1998), Florida (2000), and Georgia (2000). See *infra* app. 1, tpls.1-3.

¹²⁵ See *supra* note 124; *infra* app. 1, tpls.1-3; app. 2. There are historical differences between

Recent trends also suggest that state legislatures may have reached a “sufficient” degree of national consensus in rejecting both lethal gas and electrocution as execution methods. Although the Court has never specified how much of a consensus is considered “sufficient,” it has rendered punishments unconstitutional with far less consensus than that shown for lethal gas or electrocution. In *Enmund v. Florida*,¹²⁶ for example, the Court held the death penalty unconstitutional for some kinds of felony murder, explaining that of the thirty-six death penalty jurisdictions, “only” eight, “a small minority,” allowed capital punishment for such an offense.¹²⁷ Furthermore, even if the Court considered, along with these eight states, an additional nine jurisdictions that allowed the death penalty “for an unintended felony murder if . . . aggravating circumstances . . . outweigh[ed] mitigating circumstances,” the Court emphasized that still “only about a third of American jurisdictions” would allow a defendant to be sentenced to death for such offenses.¹²⁸ The Court noted that even though this trend was not “wholly unanimous among state legislatures” . . . it nevertheless weighs on the side of rejecting capital punishment for the crime at issue.”¹²⁹ Lastly, in those cases where the Court has rejected Eighth Amendment challenges to a particular punishment, there have been far more states employing that particular punishment than the number of states employing electrocution.¹³⁰

2. *The Overwhelming Use of Lethal Injections for Executions*

Over time, lethal injection has become the overwhelmingly dominant method of

the uses of electrocution and lethal gas that point to states’ initial, relative reluctance to reject electrocution. First, over the course of the century, states have relied on *Kemmler* to support the retention of electrocution, whereas no court case has addressed the constitutionality of lethal gas. Next, electrocution was introduced three decades earlier than lethal gas during a time when science was substantially less advanced; therefore, lethal gas, which was also a considerably more visible method than electrocution, had the advantage of greater immediate scrutiny. Nonetheless, electrocution and lethal gas have comparable “legislative lifelines” (sixty-one years and fifty-one years respectively) in terms of the point at which they were introduced and the point at which they were no longer adopted, thereby suggesting comparable periods of tolerance (electrocution was first introduced in 1888 and last adopted in 1949; lethal gas was first introduced in 1921 and last adopted in 1973). Lastly, lethal gas is more expensive than electrocution, a factor that states have acknowledged when they have changed execution methods. *See infra* app. 2.

¹²⁶ 458 U.S. 782 (1982).

¹²⁷ *Id.* at 792.

¹²⁸ *Id.* (emphasis added).

¹²⁹ *Id.* at 793.

¹³⁰ *See, e.g.,* *Stanford v. Kentucky*, 492 U.S. 361, 370–71 (1989) (rejecting a challenge to the constitutionality of the death penalty for 16-year-olds, noting that ten of the thirty-seven death penalty jurisdictions allowed capital punishment for such youths); *Penry v. Lynaugh*, 492 U.S. 302, 334–35 (1989) (rejecting a challenge to the constitutionality of the death penalty for mentally retarded persons, emphasizing that only two states had prohibited it).

execution.¹³¹ Of those inmates executed by either electrocution or lethal injection between 1978 and 2001, 80% were executed by lethal injection and 20% were executed by electrocution.¹³² As the total number of executions from these two methods increased over time (from 1 execution in 1979 to nearly 100 executions in 1999), the percentage of electrocution executions declined, albeit unevenly.¹³³ The percentage of electrocution executions dropped fairly steadily from 1981 to 1986 (from 100% to 39%), then increased briefly from 1987 to 1991 (up to 50%), then declined steadily thereafter.¹³⁴ From 1997 to 2000, electrocutions constituted less than 7% of all executions.¹³⁵ In 2001, there were no electrocutions—an unprecedented statistic.¹³⁶ Already a rarity, it is likely that electrocution will soon be extinct.

3. Other Evolving Standards of Decency Factors

There are other issues that bear on evolving standards of decency. For example, no country other than the United States uses electrocution.¹³⁷ Of the four electrocution states in this country that used electrocution with the most frequency from 1976–2000 (Alabama, Florida, Georgia, and Nebraska), Florida imposed the most electrocution executions. Since 1976, more than half of the electrocutions in this country—and thus in the world—have taken place in Florida.¹³⁸

Electrocution also is not favored as a method of execution in recent public opinion polls. Polls show that lethal injection is preferred by most, if not the great majority, of respondents.¹³⁹ Floridians as a group demonstrated majority support for lethal injection after Davis's execution.¹⁴⁰

The Florida Corrections Commission, the body responsible for overseeing Florida's electric chair, also had recommended that Florida change to lethal

¹³¹ See *infra* app. 1, tbls.1–6.

¹³² See *infra* app. 1, tbl.4.

¹³³ See *infra* app. 1, tbl.4.

¹³⁴ See *infra* app. 1, tbl.4.

¹³⁵ See *infra* app. 1, tbl.4.

¹³⁶ See *infra* app. 1, tbl.4.

¹³⁷ *Provenzano v. Moore*, 744 So. 2d 413, 436 (Fla. 1999) (Shaw, J., dissenting); *Jones v. State*, 701 So. 2d 76, 87 (Fla. 1997) (Shaw, J., dissenting); AMNESTY INTERNATIONAL, *WHEN THE STATE KILLS* 265–68 (1989).

¹³⁸ See *infra* app. 1, tbl.7.

¹³⁹ See Carla McClain, *Arizona Gas Chamber Stays*, GANNET NEWS SERV., Apr. 7, 1992, available in LEXIS, Nexis Library, Wires File (84% favoring lethal injection); George Skelton, *Death Penalty Support Still Strong in State*, L.A. TIMES, Apr. 29, 1992, at A1 (63% favoring lethal injection).

¹⁴⁰ Steve Bousquet, *Eye on 2000: A State Poll, The Chair Out of Favor*, MIAMI HERALD, Nov. 7, 1999, at 1A (reporting the results of an October 1999 statewide poll conducted by *The Miami Herald* and *The St. Petersburg Times* in which 58% of the 600 people questioned supported a state law to replace the electric chair with lethal injection); *Poll: Electric Chair Unpopular in Florida*, OMAHA WORLD-HERALD, Nov. 7, 1999, at 22A.

injection.¹⁴¹ The Commission's state-wide survey of execution methods revealed that "numerous states had recently changed to lethal injection from electrocution because it was considered to be a 'more humane method of execution.'"¹⁴² Lastly, the Humane Society of the United States and the American Veterinarian Medical Association consider electrocution a wholly unacceptable method of euthanasia for animals.¹⁴³

In *Provenzano*,¹⁴⁴ the Florida Supreme Court failed to address these critical evolving standards of decency factors. Clearly, a modern Eighth Amendment analysis of electrocution reveals the court's unjustified conclusion that electrocution is constitutional. Most perplexing was the *Provenzano* court's failure to consider legislative trends away from electrocution towards lethal injection.

E. Ongoing Legislative Problems with Electrocution: Three Current Case Studies

One of the most disturbing facets of electrocution is the extent to which it has remained a constitutional, legislative, and penal concern. Three cases in three different states illustrate the problems accompanying this persistence: (1) until 2001, the continuing application of electrocution for Georgia death row inmates sentenced before Georgia's enactment of lethal injection (in contrast to Louisiana, which has a similar statute, but declines to use electrocution); (2) the confusion in 2001 accompanying the extent to which the electrocution protocol in Nebraska corresponds with legislative intent; and (3) the difficulties that arise when an inmate unexpectedly decides to choose electrocution when lethal injection is the favored and more predictable choice—a problem Ohio confronted in 2001.

1. Georgia (and Louisiana)

In 2000, the Georgia legislature determined that all individuals sentenced to death for capital crimes committed on or after May 1, 2000, should be executed by lethal injection, while all condemned individuals sentenced to death before that date should be executed by electrocution. Previously, electrocution was the only execution method available in Georgia.¹⁴⁵ If this law had stayed in effect, 129 death row men and one woman in Georgia would have been electrocuted.¹⁴⁶

The Georgia legislature's motivation for devising such a stringent, choice-less bifurcation between execution methods is not unique; other states have recommended

¹⁴¹ *Provenzano*, 744 So. 2d at 436–37 (Shaw, J., dissenting) (citations omitted).

¹⁴² *Id.* at 437.

¹⁴³ *Id.* at 436.

¹⁴⁴ *Id.* at 413 (per curiam).

¹⁴⁵ See *infra* app. 1, tbl.2; app. 2 (Georgia).

¹⁴⁶ Dick Pettys, *Electrocution Argued in Court*, CHI. TRIB., July 10, 2001, § 1, at 12.

this peculiar strategy, eventually switching to a lethal injection-only approach due to the onslaught of litigation over the controversial prior method.¹⁴⁷ The fact that Georgia appeared not to have incorporated the experiences of other states despite the decades-long attacks on electrocution suggests that old methods die hard, along with the punitive philosophies that accompany them. Until *Dawson v. State*¹⁴⁸ was decided in 2001, no appellate court had found electrocution unconstitutional,¹⁴⁹ although lower courts in Georgia¹⁵⁰ and Nebraska¹⁵¹ had.

In *Dawson*, the Georgia Supreme Court ruled, 4–3, that the state could no longer use electrocution, explaining that the method’s “specter of excruciating pain and its certainty of cooked brains” constitutes cruel and unusual punishment.¹⁵² *Dawson* emphasized that the Georgia legislature had, since 2000, been moving in this direction.¹⁵³ Similarly, while the *Dawson* court focused on the “purposeless physical violence and needless mutilation” that characterize electrocution, the court also stressed that “many states” had moved to lethal injection, “clearly” an “important factor” in determining the constitutionality of “an older method.”¹⁵⁴

Georgia’s change spotlights the different kinds of relationships that exist between legislatures and prison personnel when the legislature has mandated a controversial execution method. For example, Louisiana’s execution method statute is comparable to Georgia’s.¹⁵⁵ Louisiana’s inmates are to be executed by electrocution if they were sentenced to death before September 15, 1991, and they are to be executed by lethal injection if they were sentenced to death after that date.¹⁵⁶ However, in practice, Louisiana’s prison officials have used only lethal injection since the change in statute because they dismantled the electric chair in 1991. Essentially, all judges issue death warrants specifying that lethal injection will be used.¹⁵⁷ No one has ever questioned the fact that Louisiana prison officials do not follow the law,¹⁵⁸ most likely because

¹⁴⁷ Denno, *Getting to Death*, *supra* note 1, at 378–79 (discussing Mississippi); *see infra* app. 2 (Mississippi).

¹⁴⁸ 554 S.E.2d 137 (Ga. 2001).

¹⁴⁹ *Id.* at 144; *see also id.* at 146–47 (Thompson, J., dissenting) (“The majority claims that state imposed electrocution has fallen into disfavor in this country, but it does not cite a single case where an appellate court in another state or the federal system has held electrocution to be cruel and unusual under a state constitution or the federal constitution. *That is because there are no cases.*”); Henry Weinstein, *Georgia High Court Relegates Electric Chair to History*, L.A. TIMES, Oct. 6, 2001, at A21 (noting that the *Dawson* court’s decision “marks the first time an appellate court has issued such a ruling against use of the electric chair”).

¹⁵⁰ *Dawson*, 554 S.E.2d at 139–41.

¹⁵¹ *See infra* notes 159–60.

¹⁵² *Dawson*, 554 S.E.2d at 144.

¹⁵³ *Id.*

¹⁵⁴ *Id.* at 143.

¹⁵⁵ *See infra* app. 2 (Louisiana).

¹⁵⁶ *See infra* app. 2 (Louisiana).

¹⁵⁷ *See infra* app. 2 (Louisiana).

¹⁵⁸ *See infra* app. 2 (Louisiana).

following it would create so many needless problems.

2. Nebraska

Two court rulings in 2000 and 2001, respectively, determined that Nebraska's four-jolt method of electrocution violates state law.¹⁵⁹ The first ruling found electrocution to be both illegal and unconstitutional, explaining that the gaps between jolts allow "the potential for the inmate to regain consciousness and experience substantial and unnecessary pain."¹⁶⁰ The second ruling upheld the constitutionality of electrocution and the 1980s protocol created for its use; however, the court concluded that the state statute requires that inmates be executed with one continuous jolt and not four separate jolts.¹⁶¹ As the court explained, "[t]he state 'has the responsibility for following a protocol that will be consistent with the statute. . . . This is not the case at the present time.'"¹⁶² On the other hand, the statute is read differently by lawyers with the Nebraska Attorney General's Office and the Director of Nebraska's Department of Correctional Services; they state that there is nothing in the statute's language suggesting one continuous current.¹⁶³

While both sides continue to wrangle, one issue is clear: the Nebraska legislature's delegation of statutory interpretation to prison officials has caused a crisis over how executions should be carried out. Moreover, by revealing that prison officials may not be operating according to legislative intent, it seems likely that prisoners' Eighth Amendment rights might have been violated. In light of Nebraska's experience with electrocution, the prospect that the Nebraska legislature may ultimately adopt lethal injection¹⁶⁴ indicates that comparable kinds of problems may occur with that method.

¹⁵⁹ Todd von Kampen, *Sticking with 4 Jolts for Now, Two Officials Say a Second Judge's Ruling Against How the Electric Chair is Used Won't Prompt Quick Changes*, OMAHA WORLD-HERALD, Feb. 23, 2001, at 9.

¹⁶⁰ *Id.* (quoting the May 2000 ruling by District Judge Robert Hippe in the 1999 murder case involving death row inmate Raymond Mata, Jr.).

¹⁶¹ *Id.* (referring to the February 22, 2001, ruling by District Judge Randall Rehmeier in the case of convicted murderer Kimberly Sue Faust). Nebraska's electrocution statute refers to a continuous current. NEB. REV. STAT. § 29-2532 (1943) ("The mode of inflicting the punishment of death, in all cases, shall be by causing to pass through the body of the convicted person a current of electricity of sufficient intensity to cause death; and the application of such current shall be continued until such convicted person is dead."); see also *supra* note 70.

¹⁶² von Kampen, *supra* note 159, at 9.

¹⁶³ *Id.*

¹⁶⁴ In January 2001, bills were introduced by Sens. Jon Bruning and Kermit Brashear to replace electrocution with lethal injection. L.B. 62, 97th Leg., 1st Reg. Sess. (Neb. 2001); L.B. 356, 97th Leg., 1st Reg. Sess. (Neb. 2001),

3. Ohio

Ohio presents yet another variation on a theme in terms of the statutory problems associated with electrocution. Until November 2001, under the Ohio statute, condemned inmates were electrocuted unless they affirmatively chose lethal injection.¹⁶⁵ Unlike Georgia's statute, this bifurcation provided all death row inmates the same punishment, and all could choose lethal injection. Unpredictably, however, John Byrd, Jr. wanted to be executed by electrocution.¹⁶⁶ According to Ohio's prison director, who was concerned about the reliability of the state's 104-year-old electric chair, such a choice could have created great emotional stress and technical difficulty, and his staff was not prepared.¹⁶⁷ As a result, in July 2001, prison officials at Ohio's Department of Rehabilitation and Correction asked the Ohio Legislature to abolish the use of electrocution because they were concerned that the electric chair may malfunction.¹⁶⁸ With the support of the state governor, the Ohio legislature enacted an emergency bill eliminating electrocution.¹⁶⁹

Such an ironic initiative contradicts the traditional sides that such parties take when the issue concerns the constitutionality of an execution method. The inmate, who does not want to be executed, is requesting the presumably harsher method to make a statement about the cruelty of electrocution and capital punishment. Prison officials clip that gesture entirely and the legislature reinforces them with a change in the statute. In the meantime, legislative change occurs because prison officials concede that they could not properly carry out the punishment that the inmate wanted and the legislature originally prescribed.

Ohio's situation, which is not unique,¹⁷⁰ highlights the paradoxical dilemma

¹⁶⁵ See *infra* app. 2 (Ohio).

¹⁶⁶ Randy Ludlow, "Old Sparky" Finale? Byrd Electrocution Maybe Chair's Last, CİN. POST, Aug. 10, 2001, at 1A.

¹⁶⁷ *Id.* ("Some pretty nasty stuff has happened around the country, and that's not something I want to put our staff through. . . . It's stressful on me [too]." (quoting Ohio Corrections Director Reggie Wilkinson)); see also Randy Ludlow, *Old Sparky is Out of Work*, CİN. POST, Nov. 16, 2001, at 19A (noting that Ohio Corrections Director Reginald Wilkinson had wanted to "dismantle the oak chair to spare his volunteer execution team from witnessing the horror of electrocution").

¹⁶⁸ *National Briefing (Midwest)*, N.Y. TIMES, July 19, 2001, at A18.

¹⁶⁹ Am. H.B. 362, 124th Gen. Assem., Reg. Sess. (Ohio 2001) (eliminating electrocution as a means of executing the death sentence), available at http://www.legislature.state.oh.us/bills.cfm?ID=124_HB_362; see also app. 2 (Ohio).

¹⁷⁰ A comparably peculiar circumstance arose when John Albert Taylor made a highly publicized choice to be executed by firing squad under Utah's choice statute, which has lethal injection as the default. See *infra* app. 2 (Utah); James Brooke, *Utah Debates Firing Squads in Clash of Past and Present*, N.Y. TIMES, Jan. 14, 1996, § 1, at 16; *Condemned Criminal in Utah Seeks Death by Firing Squad*, N.Y. TIMES, Dec. 11, 1995, at A14 [hereinafter *Condemned Criminal*]; *Firing Squad Executes Killer*, N.Y. TIMES, Jan. 27, 1996, at A22. Apparently motivated by a desire to embarrass the State, Taylor's decision accentuated current problems in administering the firing squad. See Brooke, *supra*; *Condemned Criminal*, *supra*. Regardless, the diminished

when friends and foes of the death penalty align on both sides of the execution method debate, albeit with different purposes in mind. Two state senators, both death penalty proponents, stood on either side of Ohio's debate: one senator argued to rid of electrocution in order to keep the death penalty, the other argued to keep the chair to show Ohio's law and order bent.¹⁷¹ Others engaged in the debate—including a non-legislator and opponent of the death penalty—wanted to keep electrocution because lethal injection “sanitizes” and “sugarcoats” killings; “putting someone to death (in any way) is cruel and unusual punishment.”¹⁷²

The incongruity of this dilemma is all the more pronounced when lethal injection is investigated more thoroughly. The next Part contends that lethal injection has just as many, if not more, medical and constitutional problems as electrocution.

IV. QUESTIONING LETHAL INJECTION AS A LEGITIMATE ALTERNATIVE FOR EXECUTIONS

This Part questions legislatures' and courts' presumptions that lethal injection is a constitutional method of execution. Evidence suggests that lethal injection is following a similar constitutional path taken by other execution methods that were initially viewed as humane, but later rendered problematic when there was insurmountable evidence that executions were being botched. The Court's continuing avoidance of the execution method debacle unfortunately ensures that legislatures and courts will confront the problems with lethal injection only after countless numbers of individuals have been executed inhumanely.

This Part first examines lethal injection in the context of the applicable Eighth Amendment standards. It then analyzes some of the problems associated with lethal injection as well as the dubious and limited rationales that courts have offered for finding the method constitutional.

A. *The Beginning of Lethal Injection*

Lethal injection was considered a potential method of execution as early as 1888.¹⁷³ The procedure was briskly rejected, however, predominantly because of the medical profession's belief that the public would begin to link the practice of

publicity following Taylor's death appears to have also dimmed the political concern with the firing squad.

¹⁷¹ Bill Cohen, *Ohio Considers Junking Electric Chair*, STATELINE.ORG (July 30, 2001), at <http://www1.stateline.org/story.do?storyId=138945>.

¹⁷² *Id.*

¹⁷³ In 1888, lethal injection was considered along with other execution methods when New York's governor-appointed commission was seeking the most humane means of implementing the death penalty. Denno, *Electrocution*, *supra* note 1, at 571–72; *see also supra* notes 43–44 and accompanying text (discussing the appointment of the New York commission).

medicine with death.¹⁷⁴ In 1953, the renowned British Royal Commission on Capital Punishment questioned both the humaneness and practicality of lethal injection because of the problems that could result from the peculiar physical attributes of many inmates (for example, abnormal veins) or the medical ignorance of the executioners.¹⁷⁵ Regardless, the United States commenced a renewed interest in lethal injection in 1976 after *Gregg v. Georgia*,¹⁷⁶ when the country again confronted the dilemma of executing people.¹⁷⁷

There is a range of opinion concerning the source of the country's interest in lethal injection. Some scholars insist that legislatures at the time seemed to show no preference for a particular execution method.¹⁷⁸ However, others claim that lethal injection became popular along with the conservative shift in the nation's politics.¹⁷⁹ In 1973, for example, then-Governor Ronald Reagan of California recommended the idea of lethal injection for executions when he compared it to animal euthanasia, specifically, the ease of putting a horse to sleep.¹⁸⁰ Still others contend that legislatures

¹⁷⁴ Denno, *Electrocution*, *supra* note 1, at 572–73; Patrick Malone, *Death Row and the Medical Model*, 9 HASTINGS CTR. REP., Oct. 1979, at 5; *see also* James W. Garner, *Infliction of the Death Penalty by Electricity*, 1 J. AM. INST. CRIM. L. & CRIMINOLOGY 626, 626 (1910) (stating that in the opinion of one Philadelphia physician, utilizing “the practice of medicine . . . for the purpose of putting criminals to death would arouse the unanimous protest of the medical profession”). This concern among physicians still exists. Jerome D. Gorman, M.D. et al., *The Case Against Lethal Injection*, 115 VA. MED. 576, 576–77 (1988) (“This use of a well-known medical tool, general anesthesia, for execution blurs the distinctions between healing and killing, between illness and guilt.”).

¹⁷⁵ ROYAL COMMISSION ON CAPITAL PUNISHMENT 1949–1953 REPORT 258–61 (1973) [hereinafter ROYAL COMM’N REP.] (stating that attempts to make an injection into a vein often result in practical difficulties, rendering the method unsuitable for execution). The Royal Commission discussed four major problems that are still relevant to lethal injections today: (1) lethal injection could not be administered to individuals with certain “physical abnormalities” that make veins impossible to locate and that even “normal” veins can be flattened by cold or nervousness, conditions frequently characteristic of an execution setting; (2) lethal injection is difficult unless the subject fully cooperates and remains “absolutely still”; (3) lethal injection requires medical skill, although the medical profession was opposed to participating in the process; and (4) because of such problems, it was likely that executioners would have to implement an intramuscular (rather than intravenous) injection even though the intramuscular method would be slower and more painful. *Id.* at 258–60. In 1965, executions were abandoned entirely in Great Britain; consequently, there was no reason for the British to re-evaluate whether lethal injection would be preferable to other methods of execution. FRANKLIN E. ZIMRING & GORDON HAWKINS, *CAPITAL PUNISHMENT AND THE AMERICAN AGENDA* 109 (1986).

¹⁷⁶ 428 U.S. 153 (1976) (plurality opinion).

¹⁷⁷ ZIMRING & HAWKINS, *supra* note 175, at 109–10.

¹⁷⁸ *Id.* at 109–11.

¹⁷⁹ Ward Casscells, M.D. & William J. Curran, M.D., *Doctors, the Death Penalty, and Lethal Injection*, 307 NEW ENG. J. MED. 1532, 1532 (1982).

¹⁸⁰ Then-Governor Reagan explained the procedure as follows:

Being a former farmer and horse raiser, I know what it's like to try to eliminate an injured

avored lethal injection because it appeared more humane and palatable relative to other methods,¹⁸¹ and it was cheaper.¹⁸²

Irrespective of the origins of lethal injection, legislatures embraced the method quickly. In May 1977, Oklahoma became the first state to adopt lethal injection and by 1981, five states had adopted it.¹⁸³ However, the procedure was not even used until 1982, in the botched lethal injection of Charles Brooks, Jr.¹⁸⁴ The substantial numbers of other botched lethal injections, particularly at the start,¹⁸⁵ did not deter other states from adopting the method with relative confidence and speed.¹⁸⁶

B. Types of Lethal Injection Statutes

There are six general and overlapping types of lethal injection statutes.¹⁸⁷ These

horse by shooting him . . . Now you call the veterinarian and the vet gives it a shot and the horse goes to sleep—that's it. I myself have wondered if maybe this isn't part of our problem [with capital punishment], if maybe we should review and see if there aren't even more humane methods now—the simple shot or tranquilizer.

Henry Schwarzschild, *Homicide by Injection*, N.Y. TIMES, Dec. 23, 1982, at A15 (quoting Ronald Reagan); see also Scott Christianson, *Corrections Law Developments: Execution by Lethal Injection*, 15 CRIM. L. BULL. 69, 70 (1979). Zimring and Hawkins claim, however, that the subsequent lure of lethal injection cannot be traced to any charismatic figure or special constituency. ZIMRING & HAWKINS, *supra* note 175, at 110.

¹⁸¹ Daniel C. Hoover, *Injection Death Bill Endorsed by House*, NEWS & OBSERVER (Raleigh, N.C.), June 29, 1983, at 1A. The appearance of lethal injection also was important in light of an increasing public interest in the possibility of televised executions. See, e.g., *Garrett v. Estelle*, 424 F. Supp. 468, 470–71 (N.D. Tex. 1977) (discussing an attempt by a Public Broadcasting Service television station to enjoin the Texas Department of Corrections from banning the broadcast of the first execution in Texas since 1964), *rev'd*, 556 F.2d 1274 (5th Cir. 1977); Jef I. Richards & R. Bruce Easter, *Televising Executions: The High-Tech Alternative to Public Hangings*, 40 UCLA L. REV. 381, 386–89 (1992) (discussing *Garrett* and related cases); *infra* note 206 and accompanying text (noting that the chemicals for a lethal injection execution are about \$100 or less).

¹⁸² Christianson, *supra* note 180, at 72 (contending that Oklahoma passed the lethal injection statute in part because of its economic benefits). Advocates of lethal injection present four major arguments on its behalf: (1) economy; (2) humaneness; (3) political feasibility; and (4) constitutional soundness. Herb Haines, *Primum Non Nocere: Chemical Execution and the Limits of Medical Social Control*, 36 SOC. PROBS. 442, 445–46 (1989); see also Gorman et al., *supra* note 174, at 577 (noting that lethal injection appears to be more humane and cheaper than electrocution).

¹⁸³ See *infra* app. 2 (The adopting states were: Oklahoma and Texas in 1977, Idaho in 1978, New Mexico in 1979, and Washington in 1981.).

¹⁸⁴ See *infra* app. 1, tbl.9 (Charles Brooks, Jr.).

¹⁸⁵ See *infra* app. 1, tbl.9.

¹⁸⁶ See *infra* app. 1, tbl.3; app. 2. The start of electrocution also was accompanied by large numbers of botched executions. See *supra* notes 55–56 and accompanying text.

¹⁸⁷ See *infra* app. 1, tbl.10. Additional types are possible; these six provide the most workable introduction to lethal injection statutes.

types illustrate the complex and peculiar ways in which states have introduced lethal injection as a new method of execution, particularly within the choice states, and how perpetuation of the death penalty appears to be a primary goal. Most striking are the distinctions between states that authorize either retroactive or nonretroactive applications of a new method of execution, depending on whether the amending statute was enacted after the prisoners were sentenced or convicted ("pre-enactment prisoners") or before they were sentenced or convicted ("post-enactment prisoners").

Table 10 shows that twenty-seven states provide no alternative method of execution for prisoners sentenced or convicted after the date the lethal injection statute was enacted or became effective (Type 1).¹⁸⁸ Six states allow the prisoner to choose between lethal injection and another execution method (Type 2);¹⁸⁹ three states allow someone other than the prisoner (such as the commissioner of corrections) to choose the method of execution (Type 3).¹⁹⁰ Type 3 statutes appear to be partly a function of practicality, in case one method is difficult or unavailable. In turn, five states allow choices between lethal injection and another execution method only to pre-enactment prisoners who were sentenced or convicted prior to the statute's enactment (Type 4).¹⁹¹

Table 10's choice statutes (Types 2, 3, and 4)¹⁹² illustrate legislatures' simultaneous efforts to change and retain methods of execution. Yet, such cross purposes result in nonsensical provisions that have no apparent penological or social policy justification. For example, states can allow either the prior method or the new, and purportedly more humane, method be the default if an inmate refuses to make a choice between methods. Most inmates decline, for whatever reason, to choose a particular method.¹⁹³ Consequently, they die by the least humane method in those

¹⁸⁸ These twenty-seven states are: Arizona, Arkansas, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Montana, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, and Wyoming. *See infra* app. 1, tbl.10 (Type 1 statutes); *see also infra* app. 1, tbl.1.

¹⁸⁹ These six states are: California, Florida, South Carolina, Utah, Virginia, and Washington. *See infra* app. 1, tbl.10 (Type 2 statutes).

¹⁹⁰ These three states are: Idaho, New Hampshire, and Missouri. *See infra* app. 1, tbl.10 (Type 3 statutes).

¹⁹¹ These five states are: Arizona, Arkansas, Delaware, Kentucky, and South Carolina. *See infra* app. 1, tbl.10 (Type 4 statutes).

¹⁹² *See infra* app.1, tbl.10 (statutes of Types 2, 3, and 4).

¹⁹³ For example, one small survey showed that of the twenty-four California death row inmates who were provided a choice between lethal gas and lethal injection between January 1, 1993, and October 14, 1993, two-thirds (sixteen inmates) declined to make a choice. In turn, seven selected lethal injection and one chose lethal gas. *Fierro v. Gomez*, 865 F. Supp. 1387, 1391 (N.D. Cal. 1994), *aff'd*, 77 F.3d 301 (9th Cir. 1996), *vacated on other grounds*, 519 U.S. 918 (1996) (remanding for reconsideration in light of changed statute). The Royal Commission initially considered that giving a prisoner a choice between methods would provide a way of "introducing an untried system." However, the Commission ultimately decided otherwise because of the inmate's "tormenting vacillation" involved in making such a choice. ROYAL COMM'N REP., *supra* note 175, at 220.

states that have the least humane method as the default. This least humane default dilemma prompted the California litigation that the Court was going to address before the California legislature changed the default to lethal injection.¹⁹⁴ South Carolina's choice statute is even more perplexing. Both pre-enactment and post-enactment prisoners can choose their method of execution, although the no choice default for the former is electrocution whereas the no choice default for the latter is lethal injection.¹⁹⁵ Predictably, electrocution is the constitutional substitute if lethal injection is rendered unconstitutional.¹⁹⁶

The one Type 5 statute for Louisiana is unusual because it does not allow any choice. Rather, it mandates that a pre-enactment prisoner use the method of execution that existed when the prisoner was sentenced to death—electrocution—although post-enactment prisoners receive lethal injection.¹⁹⁷ In *Malloy v. South Carolina*,¹⁹⁸ the Court held that it was not a violation of the Ex Post Facto Clause when a new, purportedly more humane, method of execution was retroactive.¹⁹⁹ Yet, Louisiana has a statute where the new, purportedly more humane, method is not retroactive.²⁰⁰ What is unique about Louisiana, however, is that the state's statutory "appearances" are deceiving about what happens in practice. Ever since September 15, 1991, when lethal injection was first made available, Louisiana officials have executed all inmates by injection, regardless of what the statute says.²⁰¹ Perhaps those officials could foresee that at some point, the use of electrocution would become a source of litigation, similar to what Georgia experienced. Until 2001, Georgia officials executed pre-enactment inmates by electrocution under a statute nearly identical in language to Louisiana's.²⁰²

The legislative concern for ensuring the continuation of the death penalty process through execution methods, however, is perhaps most clearly illustrated by the constitutional substitute provisions of the ten states listed in the last category of Table 10 (Type 6).²⁰³ These states have one or more constitutional substitutes in case lethal injection is deemed unconstitutional or invalid. In Oklahoma, for example, if lethal injection is rendered unconstitutional, the death sentence will be carried out by electrocution instead; yet, if both lethal injection and electrocution are rendered

¹⁹⁴ See *supra* note 34 and accompanying text; *infra* app. 2 (California).

¹⁹⁵ See *infra* app. 1, tbl.10; app. 2 (South Carolina).

¹⁹⁶ See *infra* app. 1, tbl.10 (Type 6 statutes); app. 2 (South Carolina).

¹⁹⁷ See *infra* app. 1, tbl.10 (Type 5 statutes).

¹⁹⁸ 237 U.S. 180 (1915).

¹⁹⁹ *Id.* at 182–84 (holding that a retroactive method of execution does not violate Article I, Section 10 of the Constitution, which bars ex post facto laws); see also *supra* notes 58, 115 and accompanying text (discussing *Malloy v. South Carolina*, 287 U.S. 180 (1915)).

²⁰⁰ See *infra* app. 2 (Louisiana).

²⁰¹ See *supra* notes 155–58 and accompanying text.

²⁰² See *supra* notes 145–55 and accompanying text; *infra* app. 2 (Georgia).

²⁰³ These ten states are: Arkansas, California, Delaware, Florida, Illinois, New Hampshire, Ohio, Oklahoma, South Carolina, and Wyoming. See *infra* app. 1, tbl.10 (Type 6 statutes).

unconstitutional, the death sentence “shall be carried out by firing squad.”²⁰⁴ Presumably, the three execution methods are ordered in terms of their relative humaneness; but currently, both constitutional substitutes (electrocution and firing squad) are considered more inhumane or problematic than lethal injection. It appears that the state’s interest is not with seeking the method that avoids unnecessary pain, but rather the constancy of the death penalty process itself, with a substitute initially considered to be second or third in a rank ordering of humaneness. States seem to have such a replacement to avoid any possible hiatus that may arise in applying the death penalty should lethal injection prove to be constitutionally troublesome.

C. The Lethal Injection Procedure

The constitutional issues concerning lethal injection have as much to do with the substance of the chemicals, as with how they are administered. In line with the paradoxical tale of execution methods generally, the motivation behind the origins of the specific lethal injection procedure that most states follow in this country was linked with improving the humaneness and cost of executions, as well as the palatability of the death penalty. Moreover, it appears that a prominent doctor—Stanley Deutsch—may have had far more influence than he realized.

In 1977, the now-deceased Senator Bill Dawson of Oklahoma asked Dr. Deutsch, then head of Oklahoma Medical School’s Anesthesiology Department, to recommend a method for executing prisoners through the administration of drugs intravenously.²⁰⁵ Senator Dawson was concerned that it would cost the state \$62,000 to fix its electric chair and \$300,000 to build a gas chamber, and he had been informed that a lethal injection procedure would be substantially cheaper.²⁰⁶ In his letter of reply to Dawson,²⁰⁷ Deutsch advised that lethal injection was “[w]ithout

²⁰⁴ OKLA. STAT. ANN. tit. 22, § 1014(B), (C) (West 1986); see also *infra* app. 1, tbl.10.

²⁰⁵ See Don Colburn, *Oklahoma Was the First*, WASH. POST, Dec. 11, 1990, (Health Section), at 14; Frank Murray, *McVeigh to Die from Mixture of 3-Drug Cocktail; Execution Foes Say It Is Inhumane*, WASH. TIMES, April 25, 2001, at A4; Jeff Stryker, *The Role of Professions in the Execution Process*, THE RECORDER, Apr. 23, 1992, at 6. Telephone Interview with Dr. Stanley Deutsch, Professor of Anesthesiology, George Washington University School of Medicine and Health Sciences (July 25, 1995).

²⁰⁶ See Stryker, *supra* note 205, at 6; see also *supra* note 182 and accompanying text (commenting on the low cost appeal of lethal injection). Currently, the cost of lethal injection drugs averages about \$100 or less, depending upon the state and other factors such as the supplier and the amount of chemicals used. See, e.g., Lawrence D. Egbert, *Physicians and the Death Penalty*, AMERICA, Mar. 17, 1998, at 16 (stating that the cost of the “anesthesia equipment” in a Maryland execution in July 1997 “was about \$75”); Frank Zoretich, *Clark Execution Cost More Than \$40,000, Officials Say*, ALBUQUERQUE TRIBUNE, Feb. 16, 2002, at A3 (explaining that “the lethal injection cocktail of drugs cost taxpayers \$91.49”); N.C. DEP’T OF CORR., EXECUTION METHODS, at <http://www.doc.state.nc.us/DOP/deathpenalty/executio.htm> (last updated Sept. 5, 2001) (noting that the cost of execution supplies in North Carolina averages about \$105.63).

²⁰⁷ Letter from Stanley Deutsch, Ph.D., M.D., Professor of Anesthesiology, University of

question . . . extremely humane in comparison to” electrocution and lethal gas.²⁰⁸ As Deutsch explained in a news article, “[f]rom what I had heard of electrocution, . . . it was pretty grotesque, with eyeballs popping out of their sockets and smoke coming out of the head helmet. It seemed to me a lethal injection would be much more humane. I thought it was a pretty good idea, myself.”²⁰⁹

The state adopted lethal injection based in part on Deutsch’s recommendation that anesthetizing would be a “rapid[ly] pleasant way of producing unconsciousness”

Oklahoma Health Sciences Center, to the Honorable Bill Dawson, Oklahoma state senator (Feb. 28, 1977) [hereinafter Deutsch Letter] (on file with the author). Deutsch’s letter reads as follows:

Dear Senator Dawson:

This letter is written to review areas that we discussed regarding execution by administration of drugs intravenously. Without question this is, in my opinion, extremely humane in comparison to either electrocution or execution by the inhalation of poisonous gases.

The administration of an ultra short acting barbiturate such as Thiopental (Pentothal) or Methohexital (Brevital) in quantities of 2000 mg with 1000 mg of Succinylcholine intravenously would produce unconsciousness within 40 seconds and death of [sic] asphyxia. Other neuromuscular [sic] blocking drugs that could be employed include Pancuronium or Decamethonium in doses of 20 mg to produce long duration of paralysis and an effect similar to Succinylcholine. The effect of [sic] combination of ultra short acting barbiturate and neuromuscular blocking drugs would produce death in a predictable way and with certainty. These drugs have understandability of terminology in all medical and other biological circles and therefore there would be no probability of confusion with regard to which drugs would be used and the intent at the doses employed.

Administration of these drugs would necessitate the starting [of] an intravenous infusion of fluids through a plastic catheter as we commonly do in the operating room. In an uncooperative patient, this would require restraint of an arm, but this can be facilitated by oral sedation or intramuscularly prior to attempting to begin the intravenous solution. This is also commonly employed in patients who are apprehensive prior to arrival in the waiting room.

Having been anesthetized on several occasions with ultra short acting barbiturates and having administered these drugs for approximately 20 years, I can assure you that this is a rapid[ly] pleasant way of producing unconsciousness. If there is any further information that I can provide you, do not hesitate to call upon me.

Sincerely yours,

/s/

Stanley Deutsch, Ph.D., M.D.
Professor and Head
Department of Anesthesiology
[The University of Oklahoma Health Sciences Center]

Id.

²⁰⁸ *Id.*

²⁰⁹ Colburn, *supra* note 205, at 14.

and ensuing death.²¹⁰ Indeed, Oklahoma's lethal injection statute, which is representative of other state statutes,²¹¹ repeats nearly verbatim the terminology that Deutsch used in his letter to describe to Dawson the two main types of drugs that Deutsch recommended. According to Deutsch's letter, unconsciousness and then "death" would be produced by "[t]he administration . . . intravenously . . . in [specified] quantities of . . . an ultra short acting barbiturate" (for example, sodium thiopental) in "combination" with a "neuromuscular [sic] blocking drug[]" (for example, pancuronium bromide) to create a "long duration of paralysis."²¹² According to Oklahoma's statute, "[t]he punishment of death must be inflicted by continuous, intravenous administration of a lethal quantity of an ultrashort-acting barbiturate in combination with a chemical paralytic agent until death is pronounced by a licensed physician according to accepted standards of medical practice."²¹³ Deutsch's recommendations of specific drugs also are incorporated in all of the latest lethal injection protocols in those states that identify the chemicals that executioners use.²¹⁴

The typical lethal injection consists of three chemicals,²¹⁵ the first two of which were suggested by Deutsch;²¹⁶ the origins of the use of the third chemical are not clear.²¹⁷ The first chemical is a nonlethal dose of sodium thiopental, commonly known by its trademark name, Sodium Pentothal, a frequently used anesthetic for

²¹⁰ Deutsch Letter, *supra* note 207 (providing specifics on how lethal injection could be carried out); see also Stryker, *supra* note 205, at 6 (summarizing Dr. Deutsch's opinion). Nancy Nunnally, a spokesperson for the Oklahoma Corrections Department, confirmed that the state changed to lethal injection for "humane" reasons. As she explained, "[p]eople don't realize it, but the electric chair can take 11 minutes to kill people. The first shock knocks you unconscious, but then it would just cook you. You would literally fry." Mary Thornton, *Death by Injection*, WASH. POST, Oct. 6, 1981, at A1.

²¹¹ See *infra* app. 1, tbl.10. See generally app. 2.

²¹² Deutsch Letter, *supra* note 207 (emphases added).

²¹³ OKLA. STAT. ANN. tit. 22, § 1014 (A) (West 1996) (manner of inflicting punishment of death) (emphases added); see also *infra* app. 2 (Oklahoma).

²¹⁴ See *infra* app. 1, tbls.11–12; app. 3.

²¹⁵ See *infra* app. 1, tbls.11–12; app. 3. For an overview of the controversy concerning these chemicals, see Haines, *supra* note 182, at 445–46 (discussing whether lethal injection is a humane method of execution); Harold L. Hirsh, *Physicians as Executioners*, LEGAL ASPECTS OF MED. PRAC., Mar. 1984, at 1, 1–2 (describing the circumstances surrounding *Chaney v. Heckler*); Don Colburn, *Lethal Injection: Why Doctors Are Uneasy About the Newest Method of Capital Punishment*, WASH. POST, Dec. 11, 1990, (Health Section), at 12 (debating the role of physicians in execution by lethal injection); *Death Dealing Syringes*, TIME, Dec. 20, 1982, at 29 (reporting the execution of Charles Brooks by lethal injection); Ian Fisher, *Merits of Lethal Injection Are Questioned by Its Foes*, N.Y. TIMES, Feb. 17, 1995, at B5 (analyzing the controversy surrounding lethal injection as a humane method to induce death); Jacob Weisberg, *This is Your Death: Capital Punishment: What Really Happens*, NEW REPUBLIC, July 1, 1991, at 23 (explaining the debate over televised executions).

²¹⁶ Deutsch Letter, *supra* note 207.

²¹⁷ See *infra* notes 234–37 and accompanying text.

surgery.²¹⁸ This article uses the generic name sodium thiopental, unless it is referring to a particular state's protocol, in order to avoid partisanship toward companies that, theoretically, are competing in the same market.²¹⁹ Like the Oklahoma statute, other lethal injection statutes refer generally to an "ultrashort-acting barbiturate" or an "ultrafast-acting barbiturate,"²²⁰ which appropriately characterize the brevity of sodium thiopental's effect.²²¹ Sodium thiopental is supposed to induce a deep sleep and the loss of consciousness, usually in about twenty seconds.²²²

The second chemical is pancuronium bromide, also known as Pavulon, a total muscle relaxant. Given in sufficient dosages, pancuronium bromide stops breathing by paralyzing the diaphragm and lungs.²²³ Again, this article refers to the generic name, pancuronium bromide.

The third and last chemical, potassium chloride—which physicians most frequently use during heart bypass surgery—induces cardiac arrest and stops the inmate's heartbeat permanently.²²⁴ Many states now use a saline solution²²⁵ to flush the intravenous line before and after each chemical is administered so that the chemicals do not clog the tubing.²²⁶

It is not clear how or why this chemical combination has persisted, although increasingly, the chemical manufacturers have come under attack for their roles in lethal injections.²²⁷ Sodium thiopental—an "ultra-short" acting drug as Deutsch and

²¹⁸ PHYSICIAN'S DESK REFERENCE 835 (55th ed. 2001); Malone, *supra* note 174, at 6.

²¹⁹ See *infra* notes 261, 320, 375–77, 381, 387 and accompanying text.

²²⁰ See *infra* app. 1, tbl.10 (Type 1 statutes).

²²¹ See *infra* note 222 and accompanying text.

²²² See Malone, *supra* note 174, at 6. Because prisoners differ in their physiological constitution as well as their drug tolerance and drug use histories, some prisoners may need a far higher dosage of sodium pentathol than others "before losing consciousness and sensation." See Affidavit of Edward A. Brunner, M.D., Ph.D., ¶ 8G [hereinafter Brunner Affidavit], Exhibit B of Verified Complaint in Chancery, Gacy v. Peters, No. 94 CH (Ill. Apr. 1994) [hereinafter Gacy Complaint].

²²³ THE AM. COLL. OF PHYSICIANS ET AL., BREACH OF TRUST: PHYSICIAN PARTICIPATION IN EXECUTIONS IN THE UNITED STATES 20 (1994) [hereinafter BREACH OF TRUST]; PHYSICIAN'S DESK REFERENCE, *supra* note 218, at 1193. Other chemical paralyzing agents include tubocurarine chloride and succinylcholine chloride, the last of which Deutsch also recommended. Deutsch Letter, *supra* note 207.

²²⁴ Malone, *supra* note 174, at 6. Potassium chloride stops the heart; potassium induces cardiac arrest. Letter to Deborah W. Denno, Professor, Fordham University School of Law, from Lawrence Egbert, M.D., M.P.H., former Professor of Anesthesiology, University of Texas Southwestern Medical School, and current President, Maryland chapter of Physicians for Social Responsibility 6 (Nov. 2001) [hereinafter Egbert Letter] (on file with the author).

²²⁵ STEDMAN'S MEDICAL DICTIONARY 1566 (26th ed. 1995) (defining "saline" as "[a] salt solution, usually sodium chloride").

²²⁶ See *infra* note 375 and accompanying text.

²²⁷ Justine Sharrock, *Undercutting Executions*, MOTHER JONES, Dec. 28, 2001, at http://www.motherjones.com/web_exclusives/features/news/executions.html (targeting Bergen Brunswig, Cardinal Health, and Abbott Laboratories); Martin Yank, *Lethal Injection*, *Cardinal*

the statutes specify²²⁸—typically wears off very quickly; other similar drugs, such as pentobarbital, endure far longer.²²⁹ The “fast acting” aspect of sodium thiopental can have horrifying effects if the inmate awakens while being administered the other two drugs.²³⁰ Deutsch recommended a dosage that appears to some doctors sufficient to keep even a drug-resistant individual asleep for an adequately long time period.²³¹ However, most states do not specify the dosage that the executioners use,²³² so that it is unclear whether the amounts are proper. Most importantly, it is totally unnecessary for the barbiturate to be “fast acting” given the availability of longer acting chemicals.²³³

The third drug, potassium chloride, may have been recommended initially for use in lethal injections by two possible sources: (1) advising doctors, some of whom were involved in developing state execution protocols (such as New Jersey’s), and/or (2) Fred Leuchter, the highly controversial and later-discredited creator of much, if not most, of the execution equipment in this country,²³⁴ including lethal injection machines.²³⁵ According to Leuchter, the New Jersey doctors agreed with his recommendation that potassium chloride be used as the third chemical in the machine Leuchter created for New Jersey’s executions.²³⁶ Because the medical literature did not have articles specifying what dosages of the drugs were adequate to be lethal, Leuchter relied on the information that was available for pigs and estimated accordingly.²³⁷

Health on the Hot Seat, COLUMBUS ALIVE (Columbus, Ohio), Jan. 17, 2002, at 7 (implicating Abbott Laboratories, Cardinal Health, Inc., Bergen Brunswig, and Ross Products).

²²⁸ See *supra* notes 207, 210, 212–13, 220–21 and accompanying text.

²²⁹ Telephone and e-mail interview with Lawrence Egbert, M.D., M.P.H., former Professor of Anesthesiology, University of Texas Southwestern Medical School, and current President, Maryland chapter of Physicians for Social Responsibility (Aug. 13, 2001).

²³⁰ See *supra* note 21 and accompanying text; *infra* notes 230, 241–42, 258, 261, 318–21, 377, 435 and accompanying text.

²³¹ Deutsch Letter, *supra* note 207 (referring to “an ultra short acting barbiturate such as Thiopental (Pentothal) or Methohexital (Brevital) in quantities of 2000 mg”); see *Sims v. State*, 754 So. 2d 657, 666 n.17 (Fla. 2000) (referring to a “lethal dose” of 2000 milligrams of sodium pentothal, “certain to cause rapid loss of consciousness (i.e., within 30 seconds of injection)”). But see Egbert, *supra* note 206, at 16 (stating that 2000 mg. of thiopental may not be lethal for some people).

²³² See *infra* app. 1, tbls.11–15; app. 3.

²³³ Egbert Letter, *supra* note 224, at 6.

²³⁴ Denno, *Getting to Death*, *supra* note 1, at 354–58, 385 n.400; Denno, *Electrocution*, *supra* note 1, at 624–62; see also *infra* notes 261, 345, 355 (noting Leuchter’s controversy and questionable credibility).

²³⁵ Denno, *Getting to Death*, *supra* note 1, at 377, 384–85; see also *infra* notes 261, 345 (noting the problems with Leuchter’s lethal injection machines).

²³⁶ STEPHEN TROMBLEY, *THE EXECUTION PROTOCOL: INSIDE AMERICA’S CAPITAL PUNISHMENT INDUSTRY* 76–77 (1992).

²³⁷ *Id.* at 77–78; see also *infra* note 345 (discussing Leuchter’s dubious “technique” for creating the chemical combinations necessary for a lethal injection).

When Deutsch recommended to Dawson two chemicals rather than three,²³⁸ the second chemical, pancuronium bromide (or a chemical similar to it),²³⁹ was intended to cause death. However, when potassium chloride is used as an additional third chemical, pancuronium bromide serves no real purpose other than to keep the inmate still while potassium chloride kills.²⁴⁰ Therefore, pancuronium bromide creates the serene appearance that witnesses often describe of a lethal injection execution, because the inmate is totally paralyzed.²⁴¹ The calm scene that this paralysis ensures, despite the fact that the inmate may be conscious and suffering, is only one of the many controversial aspects of this drug combination.²⁴²

As the following sections discuss, from the start, lethal injection was fraught with constitutional challenges that courts regularly have dismissed, despite continuing evidence of egregious mishaps. Such challenges have focused on issues suggesting that lethal injection is cruel and unusual, including, the types of drugs used and their effects, the vagueness of the lethal injection statutes, and the substantial amount of discretion that prison officials have in administering injections.

D. Judicial Challenges to Lethal Injection

Judicial dismissals of lethal injection challenges have resembled those cases dismissing electrocution challenges. However, the variations between the two types of execution methods have introduced some different legal issues as well. Of particular interest in this article are challenges concerning the extent to which a state can delegate to prison personnel the discretion and power to punish, a problem of greater relevance in lethal injection cases. In *Ex parte Granviel*,²⁴³ for example, the Texas Court of Criminal Appeals rejected the first Eighth Amendment challenge to lethal injection by emphasizing that courts, such as *In re Kemmler*,²⁴⁴ had upheld the constitutionality of other execution methods and that injection complied with “evolving standards of decency.”²⁴⁵ But, the *Granviel* court also countered a wide range of the appellant’s additional claims, arguments that would be echoed by other courts over the next quarter century: (1) any possible pain associated with injection-related complications “could be characterized as a possible discomfort or suffering necessary to a method of extinguishing life humanely”;²⁴⁶ (2) the Texas statute’s

²³⁸ Deutsch Letter, *supra* note 207.

²³⁹ The two drugs similar to pancuronium bromide were succinylcholine and decamethonium.

Id.

²⁴⁰ See *infra* note 321.

²⁴¹ See *infra* notes 261, 321.

²⁴² Emanuel & Bienen, *supra* note 19, at 923.

²⁴³ 561 S.W.2d 503 (Tex. Crim. App. 1978) (en banc).

²⁴⁴ 136 U.S. 436, 447 (1890). For a discussion of *Kemmler*, see *supra* notes 40–70 and accompanying text.

²⁴⁵ *Ex parte Granviel*, 561 S.W.2d. at 509 (quoting *Trop v. Dulles*, 356 U.S. 86, 101 (1958)).

²⁴⁶ *Id.* at 510.

failure to specify the substances to be used in the injection was no less clear than those statutes pertaining to other execution methods, such as electrocution, which no court had declared unconstitutionally vague;²⁴⁷ and (3) the fact that the Director of the Department of Corrections determined the lethal substance and procedure to be used did not constitute an improper delegation of the state's legislative power.²⁴⁸

Using *Granviel* as precedent, courts successfully thwarted two other lethal injection challenges²⁴⁹ prior to the Court's consideration of a different line of argument in *Heckler v. Chaney*.²⁵⁰ In *Heckler*, death row inmates claimed that the drugs used for lethal injection had been approved by the Food and Drug Administration (FDA) only for the medical purposes stated on their labels²⁵¹—for example, animal euthanasia²⁵²—and not for the executions of humans.²⁵³ Given this designation and the likelihood that the drugs would be applied by unknowledgeable prison personnel, “it was also likely that the drugs would not induce the quick and painless death intended.”²⁵⁴ Such practices constituted the “unapproved use of an approved drug” and therefore a violation of the prohibition against “misbranding” under the Federal Food, Drug, and Cosmetic Act.²⁵⁵ Regardless, the Court steadfastly held that the FDA's discretionary authority in refusing to initiate proceedings according to the inmates' demands was not subject to judicial review.²⁵⁶ One year

²⁴⁷ *Id.* at 511–13. The *Granviel* court set forth the standards for determining whether a statute is unconstitutionally vague:

It is, of course, true that a law must be sufficiently definite that its terms and provisions may be known, understood, and applied. An Act of the legislature which violates either of said Constitutions (Federal or Texas), or an Act that is so vague, indefinite, and uncertain as to be incapable of being understood, is void and unenforceable [sic].

Id. at 511 (internal quotation marks omitted).

²⁴⁸ *Id.* at 514 (noting that a legislative body “may delegate to the administrative tribunal or officer power to prescribe details”). See generally John H. Gordon, Jr., Note, *Criminal Procedure—Capital Punishment—Texas Statutes Amended to Provide for Execution by Intravenous Injection of a Lethal Substance*, 9 ST. MARY'S L.J. 359, 361–65 (1977) (providing arguments for why the Texas lethal injection statute is constitutional).

²⁴⁹ See *Earvin v. State*, 582 S.W.2d 794, 799 (Tex. Crim. App. 1979) (en banc) (rejecting a lethal injection challenge in one sentence by citing to *Granviel*); *Felder v. State*, 564 S.W.2d 776, 779 (Tex. Crim. App. 1978) (en banc) (same).

²⁵⁰ 470 U.S. 821 (1985).

²⁵¹ *Id.* at 823.

²⁵² *Chaney v. Heckler*, 718 F.2d 1174, 1177 n.5 (D.C. Cir. 1983), *rev'd*, 470 U.S. 821 (1985).

²⁵³ *Heckler*, 470 U.S. at 823.

²⁵⁴ *Id.*; see also Michele Stolls, *Heckler v. Chaney: Judicial and Administrative Regulation of Capital Punishment by Lethal Injection*, 11 AM. J.L. & MED. 251, 251–69 (1985) (discussing the *Heckler* Court's decision to decline to review the FDA's nonenforcement decision and its impact on the judicial regulation of death penalty cases).

²⁵⁵ *Heckler*, 470 U.S. at 823–24.

²⁵⁶ See *id.* at 837–38.

later, the Fifth Circuit Court of Appeals relied on *Heckler* in *Woolls v. McCotter*²⁵⁷ to deny Randy Woolls's claim that Congress failed to provide judicial review for the FDA's refusal to evaluate the use of sodium thiopental as a lethal drug; the court emphasized that the use of such a drug did not constitute cruel and unusual punishment.²⁵⁸ Six days after his challenge, Woolls's execution was botched.²⁵⁹

After *Woolls*, courts have rejected a range of additional challenges to lethal injection,²⁶⁰ including two group actions by inmates. In the first, a class action, Illinois death row inmates contended, among other things, that the State's use of Leuchter's lethal injection machine was unconstitutional because of Leuchter's lack of qualifications and because prison officials administered the wrong drugs.²⁶¹ Similar arguments condemning lethal injection were raised and dismissed prior to the execution of John W. Gacy.²⁶² Yet, Gacy's execution was notoriously botched.²⁶³ In a

²⁵⁷ 798 F.2d 695 (5th Cir. 1986).

²⁵⁸ See *id.* at 697–98. In support of his claim, Woolls provided testimony from several physicians contending that: (1) “the injection of sodium thiopental may cause physical and mental pain due to possible technical difficulties in administering the drug”; (2) “even if administered by a professional . . . the individual would be aware of the onset of loss of consciousness and the paralytic drug would produce a sense of shortness of breath and suffocation over a two to three minute period”; and (3) “the individual may also experience a sensation of multiple electric shocks over the entire body with erratic muscle twitching followed by acute paralysis and suffocation.” *Id.*

²⁵⁹ See *infra* app. 1, tbl.9 (Randy L. Woolls).

²⁶⁰ See, e.g., *Hill v. Lockhart*, 791 F. Supp. 1388, 1394 (E.D. Ark. 1992) (rejecting a claim that lethal injection is unconstitutional because it is not performed by medical doctors and therefore results in difficulties, such as an inability to locate a vein); *People v. Stewart*, 520 N.E.2d 348, 358 (Ill. 1988) (rejecting a claim that lethal injection constitutes cruel and unusual punishment because “defendant has submitted no evidence which indicates that execution by lethal injection results in protracted death or unnecessary pain”); see also *infra* notes 261–62, 264–79 and accompanying text.

²⁶¹ In 1990, Charles Silagy and Walter Stewart brought a class action for injunctive relief against the State of Illinois and the Illinois Department of Corrections (DOC) contending that the lethal injection procedure used by the DOC violated the Illinois death penalty statute. Plaintiffs' Complaint at 1–2, *Silagy v. Thompson*, No. 90-C-5028 (N.D. Ill. Feb. 7, 1991). Plaintiffs emphasized that they were not challenging the constitutionality of lethal injection per se, but rather the particular procedure the defendants intended to use to implement it. *Id.* at 2–3. Although the Illinois statute authorized the injection of only two chemicals (a barbiturate and a paralytic agent), the defendants authorized the injection of three chemicals—sodium pentothal, pancuronium bromide, and potassium chloride. *Id.* at 1–2. According to the plaintiffs, “defendants' procedures create the substantial risk that plaintiffs will strangle or suffer excruciating pain during the three-chemical injection, but will be prevented by the paralytic agent from communicating their distress.” *Id.* at 2. In addition, the DOC planned to use a lethal injection machine manufactured by Leuchter, despite the fact that the DOC had fired Leuchter because of his questionable qualifications. *Id.* at 6. Subsequently, Leuchter announced that his machine in Illinois was faulty and likely to fail. *Id.* at 6–7. The District Court for the Northern District of Illinois ultimately dismissed the plaintiffs' complaint. *Silagy v. Thompson*, No. 90-C-5028 (N.D. Ill. Feb. 7, 1991) (memorandum opinion and order).

²⁶² Verified Complaint in Chancery, *Gacy v. Peters*, No. 94 CH (Ill. Apr. 1994).

second group suit, thirty-six Missouri death row inmates claimed that lethal injection is unconstitutional because of the nature and length of Emmitt Foster's 1995 execution.²⁶⁴ Although a judge granted an order halting all executions in Missouri, the Eighth Circuit Court of Appeals overturned it.²⁶⁵

In *Sims v. State*²⁶⁶ and a number of preceding cases,²⁶⁷ the litigation focused again on many of the issues raised in *Ex parte Granviel*.²⁶⁸ The Supreme Court of Florida discounted Sims's constitutional challenge to lethal injection based upon a range of arguments.

First, Sims was not denied a full and fair evidentiary hearing because of "the State's failure to disclose the execution procedures or the chemicals to be used in administering the lethal injection."²⁶⁹ According to the court, Sims received a copy of the Florida Department of Corrections' "Execution Day Procedures," which disclosed the chemicals to be used during the execution, and the State presented at the evidentiary hearing three Department of Corrections (DOC) witnesses who gave more specific information about the lethal injection chemicals.²⁷⁰

Second, the Florida DOC's execution protocol provided adequate details and procedures for administering lethal injection.²⁷¹ The trial court was correct in ruling that lethal injection was neither cruel nor unusual and that "the Department of Corrections is both capable and prepared to carry out executions in a manner consistent with evolving standards of decency."²⁷² According to the *Sims* court, a comparable kind of challenge to lethal injection was "raised and rejected" by the United States District Court in *LaGrand v. Lewis*,²⁷³ in which the court held that "the written procedures are not constitutionally infirm simply because they fail to specify in explicit detail the execution protocol."²⁷⁴ Moreover, in *Sims*, the expert testimony offered by a sociologist documenting lethal injection botches "came from newspaper accounts of the execution and did not come from first-hand, eyewitness accounts or

²⁶³ See *infra* app. 1, tbl.9 (John W. Gacy).

²⁶⁴ Tom Jackman, *Death Penalty Resumes; Missouri Injection Case is With Supreme Court After Appellate Ruling*, KAN. CITY STAR, June 21, 1995, at C1; see *infra* app. 1, tbl.9 (Emmitt Foster).

²⁶⁵ Jackman, *supra* note 264.

²⁶⁶ 754 So. 2d 657 (Fla. 2000).

²⁶⁷ *LaGrand v. Lewis*, 883 F. Supp. 469, 471 (D. Ariz. 1995), *aff'd sub nom*, *LaGrand v. Stewart*, 133 F.3d 1253 (9th Cir. 1998) (listing prior cases involving a constitutional challenge to lethal injection).

²⁶⁸ 561 S.W.2d 503 (Tex. Crim. App. 1978); see *supra* notes 243-49 and accompanying text (discussing *Granviel*).

²⁶⁹ *Sims*, 754 So. 2d at 665.

²⁷⁰ *Id.* An edited version of this protocol can be found *infra* app. 3 (Florida).

²⁷¹ *Sims*, 754 So. 2d at 665-66.

²⁷² *Id.* at 668.

²⁷³ *Id.* at 666 (citing *LaGrand v. Lewis*, 883 F. Supp. 469 (D. Ariz. 1995), *aff'd sub nom*, *LaGrand v. Stewart*, 133 F.3d 1253 (9th Cir. 1998)).

²⁷⁴ *Id.* at 667 (quoting *LaGrand*, 883 F. Supp. at 470-71).

formal findings following a hearing or investigation into the matter.”²⁷⁵ The *Sims* court also discounted the expert testimony from a neuropharmacologist who provided examples of how a lethal injection execution could be botched if the chemicals were not injected properly or if prison personnel were not fit to administer them.²⁷⁶ According to the court, the expert “admitted that lethal injection is a simple procedure and that if the lethal substances to be used by DOC are administered in the proper dosages and in the proper sequence at the appropriate time, they will ‘bring about the desired effect.’”²⁷⁷ The expert also stated that “at high dosages of the lethal substances intended [sic] be used by the DOC, death would certainly result quickly and without sensation.”²⁷⁸ As the *Sims* court concluded, “[o]ther than demonstrating a failure to reduce every aspect of the procedure to writing, *Sims* has not shown that the DOC procedures will subject him to pain or degradation if carried out as planned.”²⁷⁹

Third, Florida’s lethal injection statute does not violate the Separation of Powers Clause in the Florida Constitution due to the improper delegation of legislative power to an administrative agency.²⁸⁰ Relying on *Granviel*,²⁸¹ the *Sims* court explained that the lethal injection statute “clearly defines the punishment to be imposed (i.e., death)” and “makes clear that the legislative purpose is to impose death.”²⁸² While the statute allows the DOC to determine the methodology and chemicals to be used, the court thought that delegation was more preferable than relying on state legislators because the DOC “has personnel better qualified to make such determinations.”²⁸³

The following sections of this article point out the weaknesses of the *Sims* court’s analyses. The discussion first shows that the precedent the *Sims* court cited is grossly insufficient. For example, *Sims* turns to *Ex parte Granviel*,²⁸⁴ the first case to challenge lethal injection. However, *Granviel* was decided in 1978, a quarter century ago and four years before lethal injection was ever used in this country.²⁸⁵ Like *Kemmler* is to electrocution, *Granviel* is to lethal injection—entirely inappropriate as precedent scientifically.²⁸⁶ The *Sims* court also relied heavily on *LaGrand v. Lewis*.²⁸⁷

²⁷⁵ *Id.* at 667 n.19.

²⁷⁶ *Id.* at 667–68, 667 n.19.

²⁷⁷ *Id.* at 668 n.19.

²⁷⁸ *Id.* at 668.

²⁷⁹ *Id.*

²⁸⁰ *Id.*

²⁸¹ *Id.* at 668–69 (citing *Ex parte Granviel*, 561 S.W.2d 503 (Tex. Crim. App. 1978)).

²⁸² *Id.* at 670.

²⁸³ *Id.*

²⁸⁴ 561 S.W.2d 503 (Tex. Crim. App. 1978).

²⁸⁵ In 1982, Charles Brooks was the first person to be executed by lethal injection. *See supra* note 184 and accompanying text; *infra* app. 1, tbl.9.

²⁸⁶ Notably, *Granviel* used *Kemmler* as precedent to find lethal injection constitutional. *Granviel*, 561 S.W.2d at 508–09; *see also supra* notes 243–48 and accompanying text (discussing *Granviel*’s reliance on *Kemmler*).

²⁸⁷ *Sims*, 754 So. 2d at 666–67 (citing *LaGrand v. Lewis*, 883 F. Supp. 469 (D. Ariz. 1995)).

Yet, *Lewis*—a two-page court order that never involved an evidentiary hearing on lethal injection—presents merely a short and diluted look at lethal injection and cites comparably limited reviews of the method.²⁸⁸

As this article makes clear, an Eighth Amendment analysis of lethal injection also requires that inmates have a public and detailed protocol of the lethal injection procedure far in advance of litigation. The kind of notice the *Sims* court and other courts have found acceptable is out of touch with modern science. The following sections offer a further glimpse of what these courts have lacked.

V. A MODERN EIGHTH AMENDMENT ANALYSIS OF LETHAL INJECTION

A modern Eighth Amendment assessment of lethal injection relies on the same kinds of standards that guide evaluations of electrocution: the “unnecessary and wanton infliction of pain,” the “risk” of such pain, “physical violence,” the offense to “human dignity,” and the contravention of “evolving standards of decency.”²⁸⁹ Granted, there is an ironical dearth of literature available on how to execute people. Much of this article’s, and the case law’s, analysis of the constitutionality of lethal injection relies on the expert opinions of experienced anesthesiologists²⁹⁰ because their profession is so involved in this country’s execution industry.²⁹¹

A. The Significance of Media Coverage of Executions

This article’s Eighth Amendment analysis of electrocution recognized judicial validation of a diversity of evidence to determine if an inmate experienced “unnecessary and wanton infliction of pain.”²⁹² This evidence included scientific research and eyewitness accounts of actual executions.²⁹³ More recent cases have, once again, emphasized the importance of eyewitness accounts of actual executions, this time in the context of lethal injection executions.²⁹⁴ Courts have addressed in

²⁸⁸ See generally *LaGrand v. Lewis*, 883 F. Supp. 469 (D. Ariz. 1995).

²⁸⁹ See *supra* notes 74–80 and accompanying text (discussing Eighth Amendment standards in the context of evaluating electrocution).

²⁹⁰ In addition to the medical literature, this article relies on the expert opinions of two anesthesiologists, who also have provided expert testimony in court on challenges to the constitutionality of lethal injection: Edward A. Brunner, M.D., Ph.D., former Professor of Anesthesia at Northwestern University Medical School, and Lawrence Egbert, M.D., M.P.H., former Professor of Anesthesiology at the University of Texas Southwestern Medical School and current President of the Maryland chapter of Physicians for Social Responsibility.

²⁹¹ Egbert, *supra* note 206, at 15. See generally TROMBLEY, *supra* note 236.

²⁹² See *supra* notes 81–102 and accompanying text.

²⁹³ See *supra* notes 81–95 and accompanying text.

²⁹⁴ See, e.g., *California First Amendment Coalition v. Woodford*, No. C-96-1291-VRW, 2000 WL 33173913 (N.D. Cal. July 26, 2000); *California First Amendment Coalition v. Calderon*, 88 F. Supp. 2d 1083 (N.D. Cal. 2000); *California First Amendment Coalition v. Calderon*, 956 F. Supp. 883 (N.D. Cal. 1997) (“*Calderon I*”), *rev’d* 150 F.3d 976 (9th Cir. 1998).

particular media witnesses²⁹⁵ who “almost invariably now serve as the public’s surrogate” to ensure that “no untoward conduct has occurred.”²⁹⁶ The majority of state protocols allow for media witnesses at lethal injection executions.²⁹⁷

In *California First Amendment Coalition v. Woodford*,²⁹⁸ the United States District Court for the Northern District of California listed many of the reasons why it considered the media’s viewing of executions to be significant: (1) the Eighth Amendment and the First Amendment both mandate the public’s presence during the entire execution because the public’s perception is needed to determine whether an execution protocol meets evolving standards of decency;²⁹⁹ (2) courts assessing the constitutionality of execution methods partly rely on eyewitness testimony because it “is crucial to the review of execution protocols which the courts frequently undertake”;³⁰⁰ (3) the prevailing opinion that lethal injection is the most “humane and painless” available execution method may change with the evolution of technology and society’s perceptions;³⁰¹ and (4) eyewitness media reports provide the documentation needed for society to make its judgments.³⁰² In a striking statement, the *Woodford* court made clear that “[e]xecution witnesses present by statute [were] entitled to view the entire execution, not just ‘the dying.’”³⁰³ Therefore, witnesses could observe “the condemned entering the chamber, his placement on the gurney and the installation of the intravenous device.”³⁰⁴

Given such strong reliance on the presence of the media, the *Sims* court’s dismissal of an expert sociologist’s organization of newspaper accounts of botched lethal injection executions³⁰⁵ makes no scientific or legal sense. Granted, the expert did not witness the executions; however, the reporters who wrote the newspaper articles did, oftentimes in accordance with statutes and state protocols either requiring or allowing media witnesses.³⁰⁶ Moreover, the *Sims* court contradicts its own

²⁹⁵ *Calderon I*, 956 F. Supp. at 890 (noting that the First Amendment protects public access to executions).

²⁹⁶ *Id.* at 889 (“Even though the historical basis for the media’s witnessing of executions is somewhat less clear than that of the public generally, it is no stretch to suggest that the public’s right of access includes a right of media access.”); *see also* *California First Amendment Coalition v. Calderon*, 150 F.3d 976, 981 (9th Cir. 1998) (emphasizing that “the role of the media is important; acting as the ‘eyes and ears’ of the public, they can be a powerful and constructive force, contributing to remedial action in the conduct of public business” (quoting *Houchins v. KQED, Inc.*, 438 U.S. 1, 8 (1978))).

²⁹⁷ *See infra* notes 408–11 and accompanying text.

²⁹⁸ No. C-96-1291-VRW, 2000 WL 33173913 (N.D. Cal. July 26, 2000).

²⁹⁹ *Id.* at *9.

³⁰⁰ *Id.*

³⁰¹ *Id.*

³⁰² *Id.*

³⁰³ *Id.*

³⁰⁴ *Id.*

³⁰⁵ *See supra* note 275 and accompanying text.

³⁰⁶ *See infra* notes 408–11 and accompanying text. The credibility of newspaper accounts of

conclusions when it quotes for support a portion of *LaGrand v. Lewis*³⁰⁷ which refers specifically to “eye-witness reports” of two lethal injections that confirm “the finding that the condemned lose consciousness within seconds, and death occurs with minimal pain within one to two minutes.”³⁰⁸ The *Sims* court’s conclusions regarding newspaper accounts disregard two critical criteria: (1) accepted legal standards concerning the significance of media witnesses, and (2) the court’s own evidence for finding lethal injection constitutional.³⁰⁹

B. An “Unnecessary and Wanton Infliction of Pain”³¹⁰

The most significant facet of the media case law on executions concerns the extent to which witnesses can see the earlier stages of the lethal injection process—

botched lethal injections also came up in Connecticut’s evidentiary hearing concerning the constitutionality of lethal injection. The 1997 Connecticut evidentiary hearing relied on this author’s testimony as well as the testimony of Drs. Edward Brunner and Lawrence Egbert. *State v. Breton*, No. CR4-147941 (Conn. Super. Ct. Nov. 14, 1997); *see also supra* note 290 (describing the credentials of Drs. Brunner and Egbert). Yet, the *Breton* court focused on the evidence it wanted to hear. For example, the court merely mentioned both doctors’ extended testimony concerning the risks inherent in the lethal injection process. In contrast, the court emphasized the fact that on cross examination “both doctors agreed . . . that the proper implementation of the state’s procedures by lethal injection would result in a virtually painless death.” *Breton*, No. CR4-147941, at 2. The court considered “reliable” the author’s data and studies on botched lethal injection executions, and noted my opinion that there exists a substantial risk of the infliction of unnecessary pain in light of the number of botched executions (for example, at least one in nine of twenty-two states that have the lethal injection procedure). However, the court considered my “second and third hand reports [newspaper accounts of botched executions], substantially less reliable.” *Id.* Remarkably, the court chose to credit instead the testimony of two State experts on this issue: (1) Dr. Jeffrey Gross, who testified about the “routine” and “ordinary” nature of the lethal injection process and the State’s efforts to avoid mishaps; and (2) David Nunnelee, a witness who characterized the 121 Texas executions as “seemingly painless,” and “with no outward signs of physical pain or torture.” *Id.* at 3. Moreover, the court highlighted evidence that the Deputy Commissioner of Corrections had followed “appropriate steps” to ensure a safe and effective procedure that would avoid any possible mishaps experienced in other states. *Id.* at 5.

³⁰⁷ 883 F. Supp. 469 (D. Ariz. 1995).

³⁰⁸ *Sims v. State*, 754 So. 2d 657, 667 (Fla. 2000) (quoting *LaGrand v. Lewis*, 883 F. Supp. 469, 470–71 (D. Ariz. 1995)).

³⁰⁹ The fact that other courts preceding *Sims* have reacted similarly to newspaper accounts of botched lethal injections presented by this author during evidentiary hearings provides only further evidence of how limited Eighth Amendment analyses of lethal injection have been. *See, e.g., supra* note 306 (discussing *State v. Breton* in Connecticut); *see also Ex parte Richardson*, No. 81-CR-1545 (175th Dist. Ct., Bexar County, Tex. Oct. 1, 1997) (concerning the evidentiary hearing on the constitutionality of lethal injection in Texas held on April 28–30, 1997; in that hearing, the prosecution also questioned the reliability of this author’s testimony on botched lethal injection executions based on newspaper reports).

³¹⁰ *See supra* note 74 and accompanying text.

specifically, the point at which the lethal chemicals begin to enter an inmate's body.³¹¹ For example, California now allows witnesses to view the procedure from the point just prior to the inmate "being immobilized," i.e., strapped to the gurney, to the point just after the inmate dies.³¹² However, acquiring this range in view was a legal struggle. Prison officials preferred that witnesses see the proceedings only after officials had strapped the inmate to the gurney and had inserted intravenous tubes.³¹³ Yet, the most serious problems with lethal injection executions oftentimes occur at the start of the procedure, especially when executioners try to find a suitable vein for the first injection.³¹⁴ Regardless, many execution protocols enforce strict limits on viewing witnesses.³¹⁵

In general, executioners strap the inmate to a gurney in the execution chamber, insert a catheter into a vein, and inject a nonlethal solution. After the reading of a death warrant, a lethal mixture is injected by one or more executioners or, depending upon the state, by a machine.³¹⁶ This entire procedure involves potential Eighth Amendment concerns that have not been sufficiently addressed by courts or legislatures. Moreover, given the breadth and scope of the potential difficulties associated with lethal injection, witnesses for the public should be available to monitor the inmate's last twenty-four hours (with due privacy protections of course)—including the last meal, the walk to the gurney, the tie down, intravenous injections, the pronouncing of death, and the removal of the corpse.³¹⁷

There are many practical reasons for suggesting a wide scope. First, prisoners differ in their physiological constitution as well as their drug tolerance and drug use histories; therefore, some prisoners may need a far higher dosage of sodium thiopental than others "before losing consciousness and sensation."³¹⁸ Inmates can experience substantial pain and suffering if they receive an inadequate dosage of sodium thiopental and therefore regain consciousness and sensation while being injected with

³¹¹ See *California First Amendment Coalition v. Woodford*, No. C-96-1291-VRW, 2000 WL 33173913 (N.D. Cal. July 26, 2000); *California First Amendment Coalition v. Calderon*, 88 F. Supp. 2d 1083 (N.D. Cal. 2000); *California First Amendment Coalition v. Calderon*, 956 F. Supp. 883 (N.D. Cal. 1997) ("Calderon I"), *rev'd*, 150 F.3d 976 (9th Cir. 1998).

³¹² *California First Amendment Coalition*, 2000 WL 33173913, at *10; *California First Amendment Coalition*, 88 F. Supp. 2d at 1084; *Calderon I*, 956 F. Supp. at 889–90.

³¹³ *California First Amendment Coalition*, No. C-96-1291-VRW, 2000 WL 33173913, at *10; *California First Amendment Coalition*, 88 F. Supp. 2d at 1084; *Calderon I*, 956 F. Supp. at 889–90.

³¹⁴ See *infra* app. 1, tbl.9 (detailing executioners' problems with finding a vein or keeping a needle inserted in a vein).

³¹⁵ See *infra* app. 1, tbl.18; notes 412–13 and accompanying text (analyzing statewide restrictions on witnesses viewing a lethal injection procedure).

³¹⁶ See generally TROMBLEY, *supra* note 236, at 105–16.

³¹⁷ Egbert Letter, *supra* note 224, at 7.

³¹⁸ Brunner Affidavit, *supra* note 222, ¶ 8G.

the second and third chemicals.³¹⁹ For example, the procedure initially applied in Illinois required an amount of sodium thiopental that would be insufficient to produce unconsciousness in approximately twenty percent of the population.³²⁰ If the three chemicals are administered out of sequence—for example, pancuronium bromide is administered first—there is a near certainty that the inmate will experience excruciating pain during a lethal injection even without the outside appearance of pain because the pancuronium bromide paralyzes him.³²¹

Second, the discretion allowed prison officials in administering every procedure³²² enables executioners to ignore each prisoner's physical characteristics (for example, age, body weight, health), even though these factors strongly affect an individual's reaction to the chemicals as well as the condition of their veins.³²³ For example, physicians have particular difficulty finding suitable veins among individuals with diabetes, heavily pigmented skin, obesity, or extreme muscularity, as well as the very nervous or drug users.³²⁴ Nearly one quarter of prison inmates' veins

³¹⁹ Brunner Affidavit, *supra* note 222, ¶ 8G–H; Affidavit of Lawrence Deems Egbert, M.D., M.P.H., ¶ 13 [hereinafter Egbert Affidavit], Exhibit 3 of Petition for Post Conviction Writ of Habeas Corpus, *Ex parte* Sam Felder, Jr., No. 227815-B (Tex. Crim. App. May 12, 1994) [hereinafter Felder I Petition] (pet. denied); *see also* Chaney v. Heckler, 718 F.2d 1174, 1191 (D.C. Cir. 1983) ("Even a slight error in dosage or administration can leave a prisoner conscious but paralyzed while dying, a sentient witness of his or her own slow, lingering asphyxiation."), *rev'd*, 470 U.S. 821 (1985).

³²⁰ Brunner Affidavit, *supra* note 222, ¶ 8G (Illinois Department of Correction's procedures typically recommended that 40cc of sodium pentothal be injected.).

³²¹ Brunner Affidavit, *supra* note 222, ¶ 8H. As Brunner explains:

Under such circumstances, the prisoner will suffer an extremely painful sensation of crushing and suffocation, as the pancuronium bromide takes effect and stops his ability to breathe. The pancuronium bromide will paralyze the prisoner, rendering him unable to move or communicate in any way, while he is experiencing excruciating pain. As the third chemical, potassium chloride is administered, the prisoner will experience an excruciating burning sensation in his vein. This burning sensation—equivalent to the sensation of a hot poker being inserted into the arm—will then travel with the chemical up the prisoner's arm and spread across his chest until it reaches his heart, where it will cause the heart to stop.

Id.

³²² *Id.* ¶ 7 (noting that under the Illinois procedure, "unlimited discretion to determine the dosages—and even to 'alter' the chemicals themselves—is given to unspecified 'qualified health care personnel'"); Egbert Affidavit, *supra* note 319, ¶ 7 (emphasizing the discretion under the Texas death penalty statute); *see infra* app. 3 (illustrating the amount of discretion in all state protocols).

³²³ Thomas O. Finks, *Lethal Injection: An Uneasy Alliance of Law and Medicine*, 4 J. LEGAL MED. 383, 397 (1983); Hirsh, *supra* note 215, at 1.

³²⁴ Finks, *supra* note 323, at 397 (explaining that "[l]ethal injections may not work effectively on diabetics, drug users, and people with heavily pigmented skins"); Hirsh, *supra* note 215, at 1 (noting that "if a person is nervous or fearful, his veins become constricted"); *On Lethal Injections and the Death Penalty*, 12 HASTINGS CTR. REP., Oct. 1982, at 2 [hereinafter *On Lethal Injections*] (explaining that lethal injections are particularly difficult to administer "to people with heavily

may be inaccessible "because they are deep, flat, covered by fat or damaged by drug use."³²⁵

Third, medically trained people have enough difficulty finding a vein with certain individuals; for untrained executioners, the problems are compounded substantially.³²⁶ Executioners experiencing trouble finding a vein can unnecessarily insert the catheter: (1) into a sensitive area of the body, such as the groin³²⁷ or hand;³²⁸ (2) in the wrong direction so that chemicals flow away from the inmate's heart and therefore hinder their absorption;³²⁹ (3) intramuscularly instead of intravenously.³³⁰ In some cases, executioners must perform a "cutdown," a surgical procedure that exposes the vein if there is difficulty finding one.³³¹ In addition, if the inmate eats or drinks six-to-eight hours before the execution, he may choke or gag after the injection of sodium thiopental.³³²

Finally, lethal injection is considered the most humane method for the euthanasia of animals.³³³ However, the Humane Society firmly states that the chemicals must be injected by "well trained and caring personnel"³³⁴—a sharp contrast to the

pigmented skins . . . and to diabetics and drug users"); *Another U.S. Execution Amid Criticism Abroad*, N.Y. TIMES, Apr. 24, 1992, at B7 [hereinafter *Another U.S. Execution*] (reporting that the difficulty in executing Billy Wayne White was due to his history as a heroin user); Weisberg, *supra* note 215, at 23 (describing the forty-five minutes required for technicians to find a serviceable vein in a former heroin addict).

³²⁵ Finks, *supra* note 323, at 397 (quoting Kotulak, *Execution by Injection: The Doctor's Dilemma*, CHI. TRIB., Dec. 21, 1982, § 2, at 4).

³²⁶ Egbert Affidavit, *supra* note 319, ¶ 11 ("Unskilled personnel may be unable to insert successfully the IV catheter in the prisoner. This may be because the prisoner was once an addict and used the veins carelessly so the veins clotted or because the prisoner is anxious and this causes the veins to constrict.").

³²⁷ *Capital Punishment: Cruel and Unusual*, ECONOMIST, Jan. 23, 1993, at 86 (reviewing TROMBLEY, *supra* note 236, and quoting a death row inmate, "[t]hey put a catheter in your penis"); see *infra* app. 1, tbl.9 (George "Tiny" Mercer); *infra* app. 3 (Kentucky).

³²⁸ See *infra* app. 1, tbl.9 (Rickey Ray Rector).

³²⁹ Affidavit of Stephen M. Trombley, ¶ 20 [hereinafter *Trombley Affidavit*], Exhibit A of Gacy Complaint, *supra* note 222.

³³⁰ Brunner Affidavit, *supra* note 222, ¶ 5; Egbert Affidavit, *supra* note 319, ¶ 9. If the catheter is improperly administered into the muscle, the prisoner will experience a severe burning sensation, and the drugs will take longer to absorb than if they had been directly inserted into the bloodstream. Brunner Affidavit, *supra* note 222, ¶ 8E; Egbert Affidavit, *supra* note 319, ¶ 9.

³³¹ TROMBLEY, *supra* note 236, at 261; Finks, *supra* note 323, at 397; Haines, *supra* note 182, at 448. Cutdowns are typically unnecessary if a technician is experienced and uses modern equipment. Interview with Edward A. Brunner, M.D., Ph.D., Professor of Anesthesia, Northwestern University Medical School (Apr. 29, 1997).

³³² Brunner Affidavit, *supra* note 222, ¶ 8E (noting that the risk of strangulation could be prevented by denying the prisoner food six-to-eight hours before execution).

³³³ Humane Soc'y of the U.S., *General Statement Regarding Euthanasia Method for Dogs and Cats*, SHELTER SENSE, Sept. 1994, at 11.

³³⁴ *Id.* at 11-12.

qualifications available for those executing death row inmates.

Over time, such difficulties have resulted in a high risk of lethal injection botches,³³⁵ which some experts contend “is the most commonly ‘botched’ method of execution in the United States.”³³⁶ Botches are particularly prevalent in Texas because of the state’s frequent and early use of the method.³³⁷ Even Leuchter contends that “about eighty percent” of the lethal injections in Texas “have had one problem or another,”³³⁸ although he does not document this estimate.

The execution errors in Texas are glaring and repetitive. For example, in 1985, Stephen Peter Morin waited forty minutes while executioners probed both of his arms and legs to find a vein suitable for the injection; in 1988, Raymond Landry also endured forty minutes of needle probing, shortly after which the catheter popped out of his vein and spurted the chemicals toward witnesses two feet across the room; and in 1989, Stephen McCoy’s violent physical reaction to the lethal injection drugs was so great (chest heaving, gasping, and choking) that one witnesses fainted while others gasped.³³⁹

The high percentage of botches in Texas appeared to be partly attributable to the dearth of written procedures provided to the executioners concerning how to perform an execution. Originally, these “procedures” listed little more than the chemicals to be used (in incorrect order of application) and a vague account of the content of the syringes. Moreover, there was no information specifying the nature and extent of the qualifications that executioners should have in order to perform an execution.³⁴⁰ After Stephen Morin’s 1985 botched execution, a prison spokesperson stated that the difficulty caused from inserting the needles “would probably prompt the Texas Department of Corrections to review its procedures for administering the drugs when the condemned person has a history of drug abuse.”³⁴¹ Notably, the Texas Department

³³⁵ See *infra* app. 1, tbl.9.

³³⁶ *Sims v. State*, 754 So. 2d 657, 667 n.19 (Fla. 2000) (quoting the expert testimony of Professor Michael Radelet).

³³⁷ See *infra* app. 1, tbl.9 (describing the lethal injection botches of eleven Texas inmates: Charles Brooks, Jr., James D. Autry, Thomas Andy Barefoot, Stephen Peter Morin, Randy L. Woolls, Elliot Rod Johnson, Raymond Landry, Stephen McCoy, Billy Wayne White, Justin Lee May, and Ronald Allridge). Perhaps for this reason, in 1997, a Texas district court held an evidentiary hearing on the constitutionality of lethal injection. *Ex parte Richardson*, No. 81-CR-1545 (175th Dist. Ct., Bexar County, Tex. Oct. 1, 1997); see also *supra* note 309 (discussing the Texas hearing). This hearing was followed shortly by a hearing in Connecticut because the state had just adopted, but never used, the method. *State v. Breton*, No. CR4-147941 (Super. Ct. Conn. Nov. 14, 1997). Both the Connecticut and Texas courts upheld the constitutionality of lethal injection. See *supra* notes 306, 309 (discussing, respectively, the outcomes of the hearings in Connecticut and Texas).

³³⁸ TROMBLEY, *supra* note 236, at 73 (noting that, “[i]n the final analysis, it looks disgusting” because the inmates “routinely choke, cough, spasm, and writhe as they die”).

³³⁹ See *infra* app. 1, tbl.9.

³⁴⁰ *Richardson*, No. 81-CR-1545 (testimony of Deborah W. Denno).

³⁴¹ *Murderer of Three Women Is Executed in Texas*, N.Y. TIMES, Mar. 14, 1985, at A22

of Corrections has never changed its procedures to accommodate the special injection problems associated with damaged veins.³⁴² Indeed, a botched execution attributable to an inmate's unsuitable veins occurred each year following Morin's execution until Landry's botched execution.³⁴³ Texas continues to have difficulties starting intravenous injections in former drug users.³⁴⁴ These problems also occur in other states.³⁴⁵ Georgia is now the most pronounced example of the problems that can result when executioners are ignorant and inexperienced.³⁴⁶

C. "Physical Violence" and Offends "Human Dignity"

Lethal injection does not entail mutilation in the same way as electrocution. Yet, lethal injection does offend an inmate's dignity in light of the accounts of botched lethal injections listed in Table 9³⁴⁷ and those discussed in this Part.

D. Evolving Standards and Legislative Trends

Legislative trends are moving exclusively in the direction of lethal injection.³⁴⁸ Regardless, there are significant issues concerning lethal injection that bear on the standards of decency factor. Most predominant is the ongoing stance by the American Medical Association's (AMA) Council on Ethical and Judicial Affairs, which prohibits physicians' participation in executions.³⁴⁹ Although the Council's position

[hereinafter *Murderer of Three Women*].

³⁴² See *infra* app. 3 (Texas).

³⁴³ See *infra* app. 1, tbl.9 (Randy Woolls (1986) and Elliot Rod Johnson (1987)).

³⁴⁴ See *infra* app. 1, tbl.9. The Texas executions of Billy Wayne White in 1992 and Ronald Allridge in 1995 also were botched because technicians experienced difficulties locating suitable veins. See *infra* app. 1, tbl.9.

³⁴⁵ See *infra* app. 1, tbl.9. Also, at the time lethal injection machines malfunctioned in the states that used them. By 1990, four states had purchased Leuchter-created lethal injection machines. Denno, *Electrocution*, *supra* note 1, at 627–28 (listing Delaware, Illinois, Missouri, and New Jersey). However, Leuchter had no technical or medical expertise for devising the different mixtures of chemicals he recommended. For example, when one of the first states that switched to lethal injection contacted Leuchter for advice on that method, he began to study pharmacology and chemistry. Based upon the results of studies conducted on pigs and rabbits, Leuchter calculated the dosages of sodium thiopental, pancuronium bromide, and potassium chloride required for the lethal injection of human beings. Thereafter, he created a computer-controlled machine for injecting prisoners without, he explained, rupturing their veins or inducing "undue discomfort." *Dr. Death and His Wonderful Machine*, N.Y. TIMES, Oct. 18, 1990, at A24.

³⁴⁶ See *infra* app. 1, tbl.9 (Jose Martinez High).

³⁴⁷ See *infra* app. 1, tbl.9 (Joseph High, Nov. 7, 2001).

³⁴⁸ See *supra* notes 1, 25–31, 131–36, 183–203 and accompanying text.

³⁴⁹ Council on Ethical and Jud. Affairs, AMA, Council Rep., *Physician Participation in Capital Punishment*, 270 JAMA 365, 365 (1993) [hereinafter Council on Ethical and Jud. Affairs] ("A physician, as a member of a profession dedicated to preserving life when there is hope of

pertains to all methods of execution, it is particularly applicable to lethal injection, which requires relatively more medical skill³⁵⁰ and has long been affiliated with the medical profession.³⁵¹

The question of what does and should constitute physician involvement in executions is controversial.³⁵² The AMA and state medical associations have publicly condemned physician participation in lethal injection executions, stating that a physician's role should be limited to the pronouncement of death.³⁵³ In the past, some

doing so, should not be a participant in a legally authorized execution." (quoting Council on Ethical and Jud. Affairs, AMA, Code of Med. Ethics, Current Op., Op. 2.06 (1994)); BREACH OF TRUST, *supra* note 223, at xi. The Hippocratic Oath that physicians take rests on an intention to "do no harm." *Id.* at 39. See generally W. Noel Keyes, *The Choice of Participation by Physicians in Capital Punishment*, 22 WHITTIER L. REV. 809, 812 (2001) (discussing the AMA's stance against physician participation and the long history of doctor involvement in executions). Capital punishment also contradicts nursing philosophy although the American Association of Nurse Anesthetists has not taken a formal stance concerning the participation of certified nurse anesthetists in capital punishment cases. Ann E. Aprile, *Ethical Issues Involving Medical Personnel and the Administration of Lethal Injection in Capital Punishment Cases*, CRNA: THE CLINICAL FORUM FOR NURSE ANESTHETISTS, Aug. 1996, at 116-17.

³⁵⁰ Christina Michalos, *Medical Ethics and the Executing Process in the United States of America*, 16 J. MED. & L. 125, 126 (1997) (noting that with a lethal injection execution, "[m]edical knowledge is required to order the drugs, insert the catheter and connect the monitoring equipment").

³⁵¹ James K. Boehnlein et al., *Medical Ethics, Cultural Values, and Physician Participation in Lethal Injection*, 23 BULL. AM. ACAD. PSYCHIATRY LAW 129, 130 (1995) ("Lethal injection is an example of the medicalization of a complex social issue, yet it is unique because in this instance physicians' skills and procedures are being used to carry out government mandates that contradict established medical practice (i.e., the taking of a human life)."); David J. Rothman, *Physicians and The Death Penalty*, 4 J.L. & POL'Y 151 (1995) (discussing the historical role of physicians in executions); James Welsh, *Execution by Lethal Injection*, 348 LANCET 63 (1996) (emphasizing how the growing use of lethal injection internationally is drawing physicians into further involvement with capital punishment and therefore raising serious ethical and human rights issues); James Welsh, *The Medicine That Kills*, 351 LANCET 441 (1998) (discussing a 1998 Amnesty International report detailing the problems with lethal injection and medical involvement in it).

³⁵² See, e.g., Ronald Bayer, *Lethal Injections and Capital Punishment: Medicine in the Service of the State*, 4 J. PRISON & JAIL HEALTH 7, 7-14 (1984) (discussing the controversy surrounding physician participation in lethal injections); Casscells & Curran, *supra* note 179, at 1532-33 (same); see also Neil Farber et al., *Physicians' Attitudes About Involvement in Lethal Injection for Capital Punishment*, 160 ARCHIVES OF INTERNAL MED. 2912, 2912 (2000) (reporting the results of a survey of 482 physicians and concluding that, regardless of the statements of medical societies, "the majority of physicians surveyed approved of most disallowed actions involving capital punishment, indicating that they believed it is acceptable in some circumstances for physicians to kill individuals against their wishes"); *supra* note 18; *infra* notes 363-66 and accompanying text (discussing other survey results).

³⁵³ Council on Ethical and Jud. Affairs, *supra* note 349, at 366-67. "The AMA guidelines . . . specify that selecting injection sites, starting intravenous lines, prescribing, preparing or administering injection drugs, and consulting with lethal injection personnel constitute physician participation in executions and are unethical." BREACH OF TRUST, *supra* note 223, at 20. The

states had attempted to solve this dilemma by employing Leuchter's lethal injection machines in which syringes are activated by a mechanical plunger.³⁵⁴ Yet, Leuchter's reputation has since been destroyed³⁵⁵ and no state lethal injection protocol that this author studied mentions the use of a machine.³⁵⁶ In turn, a number of state statutes are extremely vague on the subject of the procedure to be used and the involvement of medical personnel.³⁵⁷

This situation is unlikely to change, which raises a number of contentious issues. For example, is it unethical for the medical profession to loan its instruments to the state for the purposes of execution?³⁵⁸ Is it wrong for physicians to be present at a lethal injection execution even if they could prevent a mishap that could prolong the pain and death of an inmate?³⁵⁹ While some commentators raise concerns that medical involvement may inappropriately "sanitize or humanize executions,"³⁶⁰ others warn that if physicians relinquish involvement in executions to less trained

presence of a physician at a lethal injection execution was required by some state statutes such as Oklahoma's. OKLA. STAT. ANN. tit. 22, § 1014 (1996). However, this arrangement has changed for two reasons: (1) the AMA's pronouncement and physicians' complaints that states were turning executions into medical procedures, see Gorman et al., *supra* note 174, at 576; and (2) claims that physicians were blurring the line between their role as a healer and as a killer, see Fisher, *supra* note 215 (reporting that, in several states, doctors are present at executions, but do not administer the injections). As a result, states with lethal injection no longer require the services of a physician, except to pronounce death. See generally BREACH OF TRUST, *supra* note 223.

³⁵⁴ Denno, *Electrocution*, *supra* note 1, at 627–28 (listing Delaware, Illinois, Missouri, and New Jersey); see *supra* note 345 and accompanying text (discussing those states that apply Leuchter's machines).

³⁵⁵ Denno, *Electrocution*, *supra* note 1, at 664–62; see *supra* notes 234, 261, 345 and accompanying text (discussing some of the problems Leuchter has encountered).

³⁵⁶ See *infra* app. 3.

³⁵⁷ BREACH OF TRUST, *supra* note 223, at 18–20; see *infra* app. 3; *infra* notes 386–407 and accompanying text.

³⁵⁸ Aprile, *supra* note 349, at 116 (noting that the equipment loaning issue is in controversy). Some doctors have likened such involvement to the physician participation in the torture and murder of Nazi prisoners and concentration camp victims. Gorman et al., *supra* note 174, at 577.

³⁵⁹ Fred Leuchter claims that in lethal injection executions, doctors will knowingly watch prison personnel mix or inject chemicals incorrectly but not say anything because they do not want to get involved. TROMBLEY, *supra* note 236, at 74–77.

³⁶⁰ Aprile, *supra* note 349, at 116. Three doctors recently explained the problem:

Lethal injection looks more like therapy than punishment. It involves a traditional and familiar therapeutic modality, intravenous general anesthesia, typically with Pentothal and a muscle relaxant. The only difference is that the "patient," once "put to sleep," is not recovered. By wrapping punishment in a therapeutic cloak, the whole process leading to that final moment feels less aversive to those who are required to participate and is therefore more bearable.

Gorman et al., *supra* note 174, at 576 (noting that lethal injection appears to be more humane and cheaper than electrocution).

individuals, there could be far greater inhumanity.³⁶¹ A fringe of commentators compare the condemned inmate's situation to that of the terminally ill because neither has a recourse for living. Physicians are responsible for ensuring that the terminally ill die as smoothly and as painlessly as possible. Should inmates have comparable treatment?³⁶² Would it be cruel and unusual to afford anything less?

Regardless of these kinds of debates and the stance of the medical societies, physicians do participate in lethal injection executions in different ways.³⁶³ Since 1977, for example, physicians have been part of every stage of an execution, "whether preparing for, participating in, or monitoring executions or attempting to harvest prisoners' organs for transplantation."³⁶⁴ While physicians find some stages more acceptable than others, a substantial minority are involved in every possible stage. In 2001, a cross-sectional survey of 413 practicing physicians showed that forty-one percent of the respondents were willing to perform at least one action involving capital punishment by lethal injection that was disallowed by the American

³⁶¹ According to one author, for example, physicians in such a situation could be viewed as reneging on their "contract with their patients." Aprile, *supra* note 349, at 117. Yet, others view the situation far differently.

Even though lethal injection is 'medicalized' by society, there is no doctor-patient relationship and, consequently, no give and take between physician and patient. Yet even when there is no defined doctor-patient relationship, the doctor is using knowledge and skills attained during medical education and is thus recognized by society as possessing and using those specific skills that are normally used to sustain and enhance life.

Boehnlein et al., *supra* note 351, at 132.

³⁶² Aprile, *supra* note 349, at 117 (questioning whether "dignity in death and dying [are] denied as a personal right for the death-row inmate?"). *But see supra* note 351 and accompanying text (offering counter arguments).

³⁶³ This participation was thoroughly documented in *BREACH OF TRUST*, a report on physician participation in executions throughout the United States. *See BREACH OF TRUST*, *supra* note 223; *see also* Boehnlein et al., *supra* note 351, at 130; Farber et al., *supra* note 17, at 886; Farber et al., *supra* note 352, at 2912.

As of 1991, Oklahoma required physicians to order the drugs used in the lethal injection, pronounce the prisoner dead, and inspect the intravenous line started by a technician to ensure its proper function. Physicians have been required to perform cutdowns on prisoners when adequate veins could not be found. As recently as 1997, twenty-three states required physicians to determine or pronounce death, and Illinois has passed statutes specifically to allow physicians to give lethal drugs for the purposes of capital punishment. Moreover, physicians are participating via indirect means such as providing technical advice, ordering drugs, supervising drug administration, or pronouncing death. A total of twenty-seven states require or permit physicians to be involved in some way in the process of capital punishment.

Farber et al., *supra* note 352, at 2912–13.

³⁶⁴ Emanuel & Bienen, *supra* note 19, at 922 (citing Robert D. Trogg & Troyen A. Brennan, *Participation of Physicians in Capital Punishment*, 329 *NEW ENG. J. MED.* 1346, 1346–50 (1993)).

Medical Association.³⁶⁵ The proportion agreeing to perform a disallowed action ranged from the 19% who were willing to administer the lethal chemicals to the 36% who were willing to determine death.³⁶⁶

The next Part of this article discusses in greater depth the medical problems with state delegation of death in the context of lethal injection by examining all lethal injection protocols in use in this country in the first half of 2001. The Part focuses on the problems that prison officials face in having to enforce a punishment deemed acceptable in theory by legislatures but extremely difficult to apply in practice.³⁶⁷

VI. STATE DELEGATION OF LETHAL INJECTION

This Part reports the author's study of lethal injection protocols in the thirty-six states that used lethal injection as an execution method in 2001. Lethal injection protocols or information about them were gathered in at least one of three major ways, summarized in Tables 19 and 20:³⁶⁸ (1) by mail, which was forwarded by a prison official; (2) by website, in those states that had them; and (3) by e-mail or phone communication, in those states that had no available protocol or when the protocol that was available had missing information that could not be obtained in any other way except by telephone or e-mail. This Part concludes that because of the extremely vague nature of lethal injection statutes, prison officials have far too much discretion in administering injections.

A. Missing Protocols and Missing Information

One of the most striking aspects of studying lethal injection protocols concerns the sheer difficulty involved in acquiring them. As Table 11 shows, in four states, prison officials explained by phone or by e-mail that information concerning the types of chemicals used in their lethal injection executions was confidential.³⁶⁹ Yet, two of these four states—Virginia and South Carolina—ranked high, second and eighth respectively, among those states with the most number of executions since 1976;

³⁶⁵ Farber et al., *supra* note 17, at 886.

³⁶⁶ *Id.*; see also Farber et al., *supra* note 352, at 2912 (noting that in a recent survey of physicians, more than half approved of most disallowed medical actions involving capital punishment).

³⁶⁷ See generally DONALD A. CABANA, DEATH AT MIDNIGHT: THE CONFESSION OF AN EXECUTIONER (1996) (detailing former prison warden Cabana's account of the prison system and his personal problems with the administration of the death penalty); ROBERT JOHNSON, DEATH WORK: A STUDY OF THE MODERN EXECUTION PROCESS (1990) (exploring the details of the execution process from the perspectives of the death row prisoners, their guards, and the executioners).

³⁶⁸ See *infra* app. 1, tbls.19–20.

³⁶⁹ See *infra* app. 3 (Nevada, Pennsylvania, South Carolina, and Virginia).

indeed, Virginia was second only to Texas.³⁷⁰ In three other states—Kansas, Kentucky, and New Hampshire—officials explained that the information on lethal injection chemicals does not exist; for Kansas and New Hampshire, there is no protocol because there is no prospect of having an execution any time soon.³⁷¹ While on the surface such a rationale seems understandable since neither state has executed anyone for decades,³⁷² it makes it impossible to conduct a complete evolving standards of decency analysis of execution methods. If a state is going to have a death penalty with a certain method of execution, the details of that execution method should be provided. Moreover, Kentucky does engage in executions with some regularity;³⁷³ there is no reason why the state does not have a protocol.

As Tables 11 and 12 show, not surprisingly, the great majority (twenty-seven) of the states use the standard three lethal injection chemicals: sodium thiopental, pancuronium bromide, and potassium chloride. Nineteen, or 70% of these states and 53% of all states, also specifically mention the use of a saline solution in their protocol.³⁷⁴ This is important because, if the lethal injection lines are not properly flushed through with a solution such as saline, “flocculation” (clogging) can occur, as some of the protocols warn.³⁷⁵ Notably, North Carolina’s and New Jersey’s decision to use only two—rather than all three—chemicals, can have a bearing on how the execution proceeds.³⁷⁶ Of particular interest is the fact that although both states use sodium pentothal as their first chemical, they do not use the same second chemical. In North Carolina, where the second chemical is pancuronium bromide, a prisoner would take far longer to die (as much as twenty minutes) because potassium chloride kills so much more quickly. In New Jersey, where the second chemical is potassium chloride, the prisoner may die far more quickly, but the death may not be as still or “serene” as in other states because the prisoner will not be paralyzed. At the same

³⁷⁰ DEATH PENALTY INFO. CTR., STATE EXECUTIONS, at <http://www.deathpenaltyinfo.org/dpicreg.html> (last updated on Feb. 19, 2002).

³⁷¹ See *infra* app. 3 (Kansas, Kentucky, and New Hampshire).

³⁷² DEATH PENALTY INFO. CTR., STATE BY STATE DEATH PENALTY INFO., at <http://www.deathpenaltyinfo.org/firstpage.html> (indicating that Kansas and New Hampshire have had no executions since 1976) (last updated on Feb. 1, 2001).

³⁷³ DEATH PENALTY INFO. CTR., *supra* note 370, at <http://www.deathpenaltyinfo.org/dpicreg.html> (last updated on Feb. 19, 2002); TRACY L. SNELL, BUREAU OF JUSTICE STATISTICS BULLETIN, CAPITAL PUNISHMENT 1999 at 10 tbl.10 (2000).

³⁷⁴ Virginia also mentions the use of saline, although prison officials will not specify the lethal injection chemicals. See *infra* app. 1, tbl.11.

³⁷⁵ See *infra* app. 1, tbl.17. The New York protocol, for example, states the following:

1. CAUTION: If all of the sodium pentothal has not been flushed from the line, mixture with the pavulon may create flocculation (solid particles) to block the flow of the liquid through the angiocath. If blockage occurs, the remaining injections must be made in the contingency line running to the alternate site.

See *infra* app. 3 (New York).

³⁷⁶ See *infra* notes 377–78 and accompanying text.

time, there is not the prospect that a prisoner will be paralyzed in pain and unable to scream out—a potential reality in every other state.³⁷⁷

A closer look at New Jersey's lethal injection practice suggests, however, that statutes may not reflect the reality of an execution when power is delegated to prison officials. For example, the New Jersey Department of Corrections has stated consistently over the years that it plans to use three drugs when administering a lethal injection, including one to stop breathing.³⁷⁸ This approach indicates that, contrary to statute, pancuronium bromide or a chemical similar to it will in fact be administered.

B. Problems with the Quantities of Lethal Injection Chemicals

Tables 13–15 show the additional kinds of details that states provide in their protocols beyond simply listing chemicals. According to Tables 13 and 14, only nine states—or one-quarter of all death penalty states—specify the quantity of the lethal injection chemicals that they use.³⁷⁹ In other words, those states that merely list their chemicals give no indication of whether executioners are injecting sufficient quantities of those chemicals, much less whether they are injecting the chemicals in the correct order. Nor is there any indication that executioners are avoiding floccutuation and additional potential problems that witnesses may not be able to detect.

Table 15 lists the nine states that do specify the quantities of chemicals that

³⁷⁷ See *supra* notes 21, 230, 241–42, 258, 261, 318–21; *infra* note 435 and accompanying text.

³⁷⁸ Donald Janson, *Prisoners' Appeals Delay Jersey Executions*, N.Y. TIMES, March 9, 1986, at 42 (“The New Jersey law mandates death by successive injections of thiopental sodium, to render the person unconscious, pancuronium bromide to stop his breathing, and potassium chloride to end his heartbeat.”); Michael Norman, *Site of Executions Ready in Trenton*, N.Y. TIMES, Aug. 21, 1983, at 43 (referring to syringes “filled with three drugs: thiopental sodium, a fast-acting barbiturate that causes unconsciousness; pancuronium bromide, a muscle relaxant that can induce respiratory failure, and potassium chloride, a salt compound that produces an abnormal heart rhythm and heart failure”); Meg Nugent, *Death Chamber Renovations Nearly Done—Corrections Chief Sorts Through Final Details for Execution of Martini*, STAR-LEDGER (Newark, N.J.), July 30, 1999, at 21 (“[Commissioner] Terhune said he wasn’t prepared yesterday to release details on what drugs will be used, saying the decision had not yet been finalized. But he said one would serve as a relaxant while the other two would stop the heart and breathing.”); Steve Strunsky, *N.J. Law; Death, After 36 Years, Is Back on Death Row*, N.Y. TIMES, Aug. 8, 1999, § 14, at 5 (describing a “cocktail of three drugs—a sedative and drugs to arrest Mr. Martini’s heartbeat and breathing—that will kill Mr. Martini”); Joseph L. Zentner, *We Cannot Sanitize Execution*, THE RECORD (Bergen, N.J.), Oct. 27, 1985, at 1 (“Two technicians stand behind stainless-steel trays. One tray holds syringes filled with saline; the other holds the ‘hot’ syringes, which are filled with: thiopental sodium, a fast-acting barbiturate that produces unconsciousness; pancuronium bromide, a muscle relaxant that causes respiratory failure; and potassium chloride, a salt compound that induces heart failure.”).

³⁷⁹ See *infra* app. 1, tbls.13–14.

executioners are supposed to use in lethal injection executions.³⁸⁰ However, a close examination of Table 15 shows that simply because a state lists the quantities of chemicals that it uses does not mean that it provides such information properly. In order to determine the proper concentration of lethal injection chemicals, chemical quantities should be designated two ways: (1) by weight, which is indicated by grams (gm) or milligrams (mg), and (2) by volume, which is indicated by cubic centimeters (cc) or milliliters (ml). One needs to know both the weight of a chemical and the volume of diluent to determine the chemical's effectiveness. The volume of diluent for chemicals should be (1) at least large enough so that all the chemicals will be dissolved, and (2) sufficiently dilute so that it will not irritate the inmate's vein and cause that inmate pain. For example, 2.5 gm of thiopental sodium is lethal; however, that amount will merely end up as precipitated sludge if there is an attempt to dissolve it in 5 ml. If there is an attempt to dissolve the 2.5 gm of thiopental sodium in 50 ml, the resulting solution will be very irritating to the inmate's veins and therefore painful. However, dissolving 2.5 gm in 100 ml would create an effective concentration.

An examination of California's chemical quantities in Table 15 provides a good illustration of the limited amount of information that state lethal injection protocols offer. The California protocol indicates that the executioner first injects five grams of sodium pentothal (weight) in 20–25 cc of diluent (the diluent is a normal saline solution). This amount of sodium thiopental is more than enough to kill any human being. Thus, the concentration of the injection is "sufficient" at the very least; a twenty percent concentration of sodium thiopental can burn when it goes into the vein. Like most states, California has two additional chemicals to ensure death: pancuronium bromide and potassium chloride. As Table 15 shows, however, there is no designation of weight for either chemical, only volume (cc's). Therefore, it is impossible to know how much California executioners inject.

Similarly, all the chemical designations for Tennessee mention only volume (cc's) and not weight. There is not enough information to determine the adequacy of Tennessee's protocol.

Florida's chemical specifications are accurate, but incomplete, demonstrating a problem that is the converse to California and Tennessee. According to many anesthesiologists, "no less than" two grams of sodium pentothal is enough to put even a very resistant person into a long, deep, sleep;³⁸¹ however, Florida's protocol does not mention the volume of fluid used to dissolve the sodium pentothal. Nor does it mention the amount of fluid used to dissolve the pancuronium bromide and potassium chloride. Therefore, in Florida, the concentrations of all three chemicals are unknown.

In contrast to California, Florida, and Tennessee, the weights and volumes for all three lethal injection chemicals in the protocols for Connecticut, Mississippi, New

³⁸⁰ See *infra* app. 1, tbl.15.

³⁸¹ But see Egbert, *supra* note 206, at 16.

Mexico, and Washington are predictably lethal. Of all the states included in Table 15, however, Connecticut has the most technically sophisticated protocol. The amounts provided are described in a scientific way and the protocol refers both to volume (ml) and to weight (mg), as well as to “mEq” (milliequivalent), a sound technical description. The doses administered in Connecticut are certainly enough to kill even a very resistant person.

For Mississippi, the amounts and descriptions of all three chemicals also seem lethal per syringe. However, the Mississippi protocol’s reference to two syringes for pavulon and three syringes for potassium chloride creates considerable confusion regarding how officials actually administer the injection. The Mississippi Department of Corrections representative was unable to elaborate further,³⁸² making the protocol difficult to evaluate.

The North Carolina protocol specifies the weight for sodium pentothal (typically far more than sufficient). However, the rest of the protocol’s description is very confusing. For example, the same protocol provides the unit of liquid for pavulon, but not the weight. The concentration is unknown.

In Montana, the amount of sodium pentothal is not a lethal dose; it is one-fourth or less than that used in other states. Therefore, if the pancuronium bromide is effective while the sodium pentothal is wearing off, the inmate would be paralyzed but awake. In turn, the Montana protocol refers only to ampules for the pavulon and the potassium chloride, so that the concentration of either chemical is unknown.

Overall, there is inordinate variation and incompleteness across the nine states that provide quantities of lethal injection chemicals in Table 15. Note that Table 15 does not list those states where most lethal injection executions have been performed (those among the top five) and lists only two states that have had at least five lethal injection executions between 1977–1999 (North Carolina and California).³⁸³ Whereas Montana and Washington have had two and one lethal injection executions, respectively, between 1977–1999, the remaining states listed in Table 15 did not have any (Connecticut, Florida, Mississippi, New Mexico, and Tennessee).³⁸⁴ Paradoxically, then, those states with the most number of lethal injection executions are the least informative about how they perform executions. In contrast, those states that have among the fewest lethal injection executions, or who had not lethally injected anyone at all during this time period, are the most informative.

Simply because some states specify the amounts of their chemicals, however, does not mean that their efforts are valid and reliable. Those states that do provide quantities of injection chemicals vary so widely in terms of their doses and

³⁸² See *infra* app. 3 (Mississippi).

³⁸³ States with the highest number of lethal injection executions, from 1977–1999, rank as follows: Texas (199), Virginia (48), Missouri (41), Arkansas (20), Oklahoma (19), South Carolina (19), Arizona (17), North Carolina (13), Illinois (12), Delaware (9), Nevada (7), California (5), and Louisiana (5). SNELL, *supra* note 373, at 16 app. tbl.4.

³⁸⁴ SNELL, *supra* note 373, at 16 app. tbl.4.

instructions, it is not surprising that botched executions result. Furthermore, with rare exceptions, there is no information available on who measures the chemicals or even whether the executioner gives the full amount of chemical quantities that are indicated. For example, even if an execution takes place in a state that appears to have some sophistication in listing its chemicals (for example, Connecticut), there is no assurance that the executioner actually injects what the Connecticut protocol lists. The practice in New Jersey suggests that prison officials may not even follow what the state legislature dictates, much less what the lethal injection protocol may describe.³⁸⁵ As the following section discusses, protocols mention little to nothing about the medical expertise of the executioners.

C. Executioners and Execution Procedures

The thirty-six lethal injection states provide minimal information in their protocols on the quality or training of those individuals selected to execute an inmate (Table 17). Fourteen states—or approximately 39% of all the states³⁸⁶—for example, mention “training” or “competency” or “preparation” or “practice” for the executioners. Moreover, even among those states that mention some training, there is little to no indication of what kind of preparation the department of corrections offers. Likewise, only eight states give any direction concerning how an executioner should proceed if there are serious, foreseeable, or unexpected problems with the execution procedure or with the inmate: (1) Florida (if death does not occur initially), (2) Georgia (if a suitable vein cannot be found), (3) Indiana (if an inmate has “extremely small veins”), (4) New Jersey (if a vein cannot be found, warns that medication “must not be rapidly or sporadically injected,” and directs that executioners should provide life saving techniques if a stay is called), (5) New Mexico (warns that flocculation can occur if sodium pentothal is not flushed from the line and recommends using the other injection tube), (6) New York (warns that if sodium pentothal is not flushed from the line, flocculation may occur if it mixes with the pavulon), (7) Tennessee (if death does not occur initially), and (8) Washington (notes that the “condemned’s file is examined to see if any special instructions may be required”).³⁸⁷

Ironically, the mere fact that the protocols in eight states warn executioners of problems, suggests that prison officials are aware of the hazards involved if ill-trained individuals administer a lethal injection. An experienced anesthetist would not need such warnings, or surely not in the context of a written protocol to be learned at the time of the execution. Furthermore, the remaining states basically say nothing about preventing problems.

³⁸⁵ See *supra* note 378 and accompanying text.

³⁸⁶ The fourteen states are: Arizona, Connecticut, Illinois, Louisiana, Montana, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Texas, Utah, and Washington. See *infra* app. 1, tbl.17.

³⁸⁷ See *infra* app. 1, tbl.17.

Criteria for selecting or training executioners in these states appear to be nonexistent. In eight states, the executioners are anonymous department of corrections staff members,³⁸⁸ whereas in five states, the warden or commissioner selects executioners without specifying if they are staff members.³⁸⁹ Five other states simply mention the number of people on an execution team or the mere fact that there is a team.³⁹⁰ Only Arkansas relies on "unpaid volunteers."³⁹¹ In turn, eight states³⁹² do not provide any information whatsoever. Regardless of such silence about training, state protocols also are lax on giving directions concerning what executioners should do if there is a stay of execution. For example, seventeen states do not indicate whether they have phone lines in effect for the governor or other individuals to call to stop an execution.³⁹³

In some states, it is unclear who is to pronounce death when the execution goes through, or whether there is any involvement of medical personnel, particularly physicians. Because of the significance of physician contributions, Table 17 examines lethal injection protocols as well as all state statutes specifying the involvement of medical personnel in executions. For most (twenty-seven) states, the protocols overlapped substantively with the statutes. In nine states, however, the statutes offered some additional information.³⁹⁴ Regardless of the source (protocol or statute), in eight states, there is no mention that medical personnel are to participate in any way, even in pronouncing death.³⁹⁵ If only protocols are examined for this information and not statutes, this figure would rise to fifteen states.³⁹⁶ Relying on both protocols and statutes, Table 17 shows that physicians are present to declare or "pronounce" death in thirteen states,³⁹⁷ a coroner pronounces death in five states,³⁹⁸ and the warden or

³⁸⁸ The eight states are: California, Colorado, Connecticut, Delaware, Georgia, Idaho, North Carolina, and Ohio. *See infra* app. 1, tbl.17.

³⁸⁹ The five states are: Florida, Maryland, Montana, New Jersey, and New Mexico. *See infra* app. 1, tbl.17.

³⁹⁰ The five states are: Arizona, Indiana, Mississippi, Oklahoma, and Utah. *See infra* app. 1, tbl.17.

³⁹¹ *See* app. 1, tbl.17.

³⁹² The eight states are: Kansas, Kentucky, Missouri, Nevada, New Hampshire, South Carolina, South Dakota, and Tennessee. *See infra* app. 1, tbl.17.

³⁹³ These seventeen states are: Delaware, Kansas, Kentucky, Louisiana, Maryland, Missouri, Nevada, New Hampshire, North Carolina, Oklahoma, South Carolina, South Dakota, Texas, Utah, Virginia, Washington, and Wyoming. *See infra* app. 1, tbl.17.

³⁹⁴ *See infra* app.1, tbl.17.

³⁹⁵ These eight states are: Arizona, Arkansas, Delaware, Illinois, Kansas, Maryland, Montana, and Utah. *See infra* app. 1, tbl.17.

³⁹⁶ The seven additional states are: Kentucky, Nevada, New Hampshire, Oklahoma, Pennsylvania, South Carolina, and Virginia. *See supra* note 395 for the other eight states.

³⁹⁷ These thirteen states are: California, Connecticut, Florida, Georgia, Indiana, Mississippi, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oregon ("a medical professional"), and Washington. *See infra* app. 1, tbl.17.

³⁹⁸ These five states are: Colorado, Idaho, Louisiana, Montana, and Pennsylvania. *See infra*

deputy commissioner in one state.³⁹⁹ In South Dakota, there is a required post-mortem exam and report.⁴⁰⁰ Only Florida states specifically that a pharmacist prepares the lethal injection.⁴⁰¹ In general, states allow for substantial physician participation, although the roles are limited, at least officially.

There is strikingly little information on the time of the last meal and the time of the execution (Table 16).⁴⁰² The length of time between the meal and the execution is important because if the inmate ingests food or drink six-to-eight hours before the execution, the inmate may choke or gag when sodium thiopental is injected.⁴⁰³ There are six states that provide some information on this time frame:⁴⁰⁴ (1) Indiana, five-to-six hour span; (2) New Jersey, not less than eight hours; (3) Ohio, approximately six hours; (4) Oregon, approximately six hours; (5) Texas, approximately two-to-three hours; and (6) Virginia, not less than four hours.⁴⁰⁵ Ironically, Texas and Virginia, the states with the highest numbers of lethal injection executions,⁴⁰⁶ have the shortest time span between the meal and the execution (of those states that mention any time span), and neither time span even approximates the six-to-eight hour parameter.

The next section examines the extent to which protocols allow or encourage witnesses to view an execution. This issue is particularly significant given the litigation brought by journalists concerning how much of a lethal injection they can watch.⁴⁰⁷

D. General Witnesses and Media Witnesses

Table 18 shows how many states have “general witnesses” for executions—individuals who include anyone from a family member to a physician to a corrections officer—as well as “media witnesses”—individuals who represent one or more of a broad range of media.⁴⁰⁸ The great majority of states specify that there should be general witnesses present for the execution, although the types of witnesses vary substantially. Of the seven states that do not provide such specification, four have no

app. 1, tbl.17.

³⁹⁹ The single state is North Carolina. *See infra* app. 1, tbl.17.

⁴⁰⁰ *See infra* app. 1, tbl.17.

⁴⁰¹ *See infra* app. 1, tbl.17.

⁴⁰² *See infra* app. 1, tbl.16.

⁴⁰³ Brunner Affidavit, *supra* note 222, ¶ 8E (noting that the risk of strangulation could be prevented by denying the prisoner food six-to-eight hours before execution); *see supra* note 332 and accompanying text.

⁴⁰⁴ The six states are: Indiana, New Jersey, Ohio, Oregon, Texas, and Virginia. *See infra* app. 1, tbl.16.

⁴⁰⁵ *See infra* app. 1, tbl.16.

⁴⁰⁶ *See supra* note 383 and accompanying text.

⁴⁰⁷ *See supra* notes 294–313 and accompanying text.

⁴⁰⁸ *See infra* app. 1, tbl.18.

protocol at all.⁴⁰⁹ Only two states omit any mention of general witnesses from the protocols they do have and one state (Nevada) indicates that the information is confidential.⁴¹⁰ Most states also allow for media witnesses, although eight of the states that provide for general witnesses do not mention explicitly whether they allow for media witnesses as well.⁴¹¹

Altogether, fourteen state protocols specified what media witnesses could view during an execution. None of these protocols echoed the liberal scope upheld by the court in *California First Amendment Coalition v. Woodford*,⁴¹² which allowed witnesses to see the entire lethal injection procedure, including the inmate being injected.⁴¹³ Rather, all fourteen protocols shield witnesses from the actual injection of the inmate and differ to the extent they cover other parts of the procedure. The protocols can be divided into four general categories (minor differences between them are presented in Table 18), ranging from the least restricted (1) to the most restricted (4) viewing:

(1) Witnesses arrive to view the execution before the execution team has inserted intravenous catheters into the inmate's arm. The curtain to the witness room is then closed only to be reopened after the intravenous catheters have been inserted into the inmate. The execution continues and, presumably, death is pronounced (Louisiana and Virginia).

(2) Witnesses arrive to view the execution after the execution team has inserted intravenous catheters into the inmate's arm and they stay to view until the inmate's death is pronounced (Colorado, Georgia, Mississippi, New Mexico, North Carolina, Oregon, South Dakota, and Texas).

(3) Witnesses arrive to view the execution after the execution team has inserted intravenous catheters into the inmate's arm and they stay to view until all the chemicals have been injected. The curtain is then closed and a physician is called in to pronounce death. After the physician pronounces death, the curtain is raised and there is an official pronouncement of death made to the witnesses (New York, Ohio, and Tennessee).

(4) Witnesses arrive to view the execution after the execution team has inserted intravenous catheters into the inmate's arm and they stay to view until all the chemicals have been injected. The curtain is then closed and the inmate's death is pronounced (Connecticut).

⁴⁰⁹ These four states are: Kansas, Kentucky, New Hampshire, and Pennsylvania. *See infra* app. 1, tbl.18; *see also infra* note 410 and accompanying text for the other three states.

⁴¹⁰ The two states that omit any mention of general witnesses are Arizona and Nevada. *See infra* app. 1, tbl.18.

⁴¹¹ These eight states are: Arkansas, Florida, Idaho, Illinois, Indiana, Maryland, Missouri, and Wyoming. *See infra* app. 1, tbl.18.

⁴¹² *See supra* notes 294–313 and accompanying text (discussing all the stages of the litigation).

⁴¹³ *See supra* notes 312–13 and accompanying text.

The four categories indicate that the primary distinction among them is whether witnesses are allowed to see the inmate die (categories one and two only). While this distinction may appear to be minor, the practical implications can be significant. Lethal injection botches can occur even if the injection procedure has been hidden from view or has seemingly gone smoothly (for example, the inmate may react to the chemicals). The following Part reviews the preceding sections of this article in the context of the Timothy McVeigh execution which, from most accounts, appeared quiet and serene except to some of those with a more trained eye.

VII. DISCUSSION: LETHAL INJECTION AND TIMOTHY McVEIGH

This article discusses the paradoxical motivations behind legislative changes from one method of execution to the next. Legislatures and courts have consistently stated that the primary reason states switch execution methods is to ensure greater humaneness and decency for death row inmates.⁴¹⁴ Throughout history, however, it appears that such moves were prompted primarily because the death penalty itself became jeopardized due to a state's particular method—be it hanging, electrocution, or lethal gas.⁴¹⁵ The result has been a warped legal “philosophy” of punishment, at times peculiarly aligning both friends and foes of the death penalty alike. This “death-penalty goal” also has wrongly enabled legislatures to delegate death to uninformed prison personnel.

What frames this paradox are the competing and contradictory efforts by legal actors to abolish or expand the death penalty. Such wrangling has become all the more acute as states increasingly drop electrocution in order to adopt lethal injection.⁴¹⁶ For example, some death penalty proponents feel that electrocution better represents the retributive goal of the death penalty and that lethal injection is far too soft on criminals. This perspective was stunningly represented by Bob Butterworth, the Attorney General of Florida, who stated that Pedro Medina's horrendously botched electrocution⁴¹⁷ would serve as both a means of retribution and as a deterrent.⁴¹⁸ “People who wish to commit murder, they better not do it in the state of

⁴¹⁴ Denno, *Getting to Death*, *supra* note 1, at 439–64; *see also supra* notes 142, 152–54, 165–69, 210; *infra* notes 424–25 and accompanying text.

⁴¹⁵ Denno, *Getting to Death*, *supra* note 1, at 388–98; *see also supra* notes 6, 9, 32–38, 57, 150–51, 171, 203–04 and accompanying text. Kentucky is a classic example of how a state legislature's decision to switch from electrocution to lethal injection sparked a debate about the acceptability of the death penalty itself. Michael Collins, *Bill Replaces Electrocution with Lethal Injection*, CIN. POST, Jan. 9, 1998, at 5K; Tom Loftus, *1998 Kentucky General Assembly: House Backs Execution by Injection*, COURIER-JOURNAL (Louisville, Ky.), Jan. 15, 1998, at 1B.

⁴¹⁶ *See supra* notes 109–36 and accompanying text; *infra* app. 1, tbls. 1–6.

⁴¹⁷ *See infra* app. 1, tbl. 8.

⁴¹⁸ *Condemned Man's Mask Bursts Into Flame During Execution*, N.Y. TIMES, Mar. 26, 1997, at B9 [hereinafter *Condemned Man's Mask*].

Florida because we may have a problem with our electric chair.”⁴¹⁹ Yet, Butterworth’s pronouncements were consistent with this country’s century-long tendency to use execution methods as a punishment device extending well beyond “death,” both symbolically and politically.⁴²⁰

Other death penalty proponents claim that lethal injection is not cruel enough. As the mother of one crime victim stated in an interview preceding the execution of her daughter’s killer, lethal injection “is too quick. . . . He would need to suffer a little bit more according to what he gave [my daughter], which was a lot of suffering.”⁴²¹ Justice Scalia may have mirrored such views when describing a gruesome case he considered particularly eligible for the death penalty—the rape and murder of an eleven-year-old girl.⁴²² “How enviable a quiet death by lethal injection compared to that!”⁴²³ At the same time, legislatures and courts are appealing to such anecdotal accounts from a vengeful minority; the majority of Americans in public opinion polls⁴²⁴ as well as some prison officials⁴²⁵ prefer lethal injection because they consider it to be the most humane method. Others view injection as an effective way to perpetuate the death penalty because it makes the process seem less gruesome.⁴²⁶

The dialogue surrounding the federal execution of Timothy McVeigh illustrates these tensions. The protocol for federal execution by lethal injection, which is not released to the public without a Freedom of Information Act request, uses the same three chemicals applied in most states.⁴²⁷ Because McVeigh’s death was so rapid,⁴²⁸ some witnesses complained that it was too painless as compared to that of his victims. “He didn’t suffer at all,” recounts one witness, but rather “just went to sleep.”⁴²⁹ In

⁴¹⁹ *Id.*

⁴²⁰ See generally Denno, *Getting to Death*, *supra* note 1, at 391–98; Denno, *Electrocution*, *supra* note 1; *supra* notes 2–3 and accompanying text.

⁴²¹ *Man Executed for 1986 Murder*, AUSTIN AMERICAN-STATESMAN, June 21, 1995, at B5.

⁴²² *Callins v. Collins*, 510 U.S. 1141, 1143 (1994) (Scalia, J., concurring).

⁴²³ *Id.*

⁴²⁴ See *supra* notes 139–40 and accompanying text.

⁴²⁵ See *supra* note 141; *infra* note 440 and accompanying text.

⁴²⁶ See *supra* notes 10, 37–38, 171, 180–81 and accompanying text.

⁴²⁷ The protocol for a federal lethal injection consists of three ten-second injections into the saline running through the intravenous tube. The injections are one minute apart. The three drugs used in the lethal injection are sodium thiopental, pancuronium bromide, and potassium chloride. When all goes as planned, death takes less than two minutes after the final injection. The entire execution takes about four and a half minutes. Murray, *supra* note 205; Lois Romano, *McVeigh is Executed*, WASH. POST, June 12, 2001, at A13.

⁴²⁸ At 7:10 a.m. EDT, the first chemical was injected into the intravenous line in McVeigh’s right leg, which was not visible to the witnesses. Romano, *supra* note 427. The next drug was administered at 7:11, and at 7:14 McVeigh was dead. *Witnesses Describe McVeigh’s Last Moments*, CNN.COM LAWCENTER, (June 11, 2001), at <http://www.cnn.com/2001/LAW/06/11/mcveigh.witnesses/> [hereinafter *Witnesses Describe McVeigh’s Last Moments*]. In total, the execution was four minutes long. Romano, *supra* note 427.

⁴²⁹ Pam Belluck, *The Scene: Calm at Execution Site and Silence by McVeigh Prove Unsettling*

general, witnesses appeared to believe that McVeigh's transition from life to death was "subtle";⁴³⁰ the relaxing of his eyes and lips was the only indication of his "remarkably uneventful" death.⁴³¹

Other witnesses' observations suggested, however, that McVeigh's death was slightly more difficult. As the first injection occurred, McVeigh's chest moved up and down, his lips puffed air out, his jaw clenched, and his eyes glassed over but remained open.⁴³² As the next two chemicals were injected, his skin turned pale yellow.⁴³³ The most dramatic account came from a media witness who recalled McVeigh's eyes glassing over to the point of being watery as the injections were administered,⁴³⁴ a sign to some anesthesiologists that McVeigh may have been tearing due to pain.⁴³⁵

The point here is not to invoke sympathy for McVeigh, but rather to scrutinize the process by which he was executed and the inconsistencies surrounding it. On the one hand, the public outrage against McVeigh seemed limitless and death in the form of lethal injection too good for him.⁴³⁶ On the other hand, the impending execution

for *Some*, N.Y. TIMES, June 12, 2001, at A27.

⁴³⁰ *Id.*

⁴³¹ *Witnesses Describe McVeigh's Last Moments*, *supra* note 428, at <http://www.cnn.com/2001/LAW/06/11/mcveigh.witnesses>; see also Romano, *supra* note 427. Most witnesses reported that McVeigh's eyes blinked a few times and then very slowly started to move back in his head. Rick Bragg, *McVeigh Dies for Oklahoma City Blast*, N.Y. TIMES, June 12, 2001, at A1; see also Paul Duggan, *Too Easy For Him: For Witnesses in Oklahoma, A Long Day Brought Little Relief*, WASH. POST, June 12, 2001, at A1; Alex Rodriguez, *U.S. Executes its Worst Terrorist*, CHI. TRIB., June 12, 2001, at A17; *Witnesses Describe McVeigh's Last Moments*, *supra* note 428, at <http://www.cnn.com/2001/LAW/06/11/mcveigh.witnesses>. Others observed McVeigh blow air out of his mouth twice before his eyes rolled back. Bragg, *supra*; see also Duggan, *supra*; Rodriguez, *supra*. These accounts agree that the death seemed peaceful.

⁴³² Caryn James, *The Coverage: The Oklahoma Bomber's Final Hours Are Hardly Television News's Finest*, N.Y. TIMES, June 12, 2001, at A26. Several witnesses observed McVeigh's eyes turning glassy. Bragg, *supra* note 431.

⁴³³ James, *supra* note 432; see also Bragg, *supra* note 431; Romano, *supra* note 427. Another victim witness observed a momentary lapse in McVeigh's otherwise blank expression—as the sedative took hold, McVeigh apparently clenched his mouth as if "he was trying to fight the sleep." Bragg, *supra* note 431. Another witness account also recalls McVeigh's pursed lips and a tight jaw. Romano, *supra* note 427.

⁴³⁴ Romano, *supra* note 427.

⁴³⁵ Telephone Interview with Edward Brunner, M.D., Ph.D., Professor of Anesthesiology, Northwestern University Medical School (Aug. 6, 2001); see also Bruce Shapiro, *Dead Man Waking*, TALK MAG., Oct. 2001, at 86 (discussing the observations of Mark Heath, an anesthesiologist and neuroscientist at Columbia Presbyterian Medical Center, stating that McVeigh's tear was "a classic sign of an anesthetized patient being awake").

⁴³⁶ *20/20 Friday: An Eye for an Eye, A Life for a Life; The Prosecutor; Joseph Hartzler Discusses Prosecuting Timothy McVeigh* (ABC television broadcast, May 4, 2001); *20/20 Friday: An Eye for an Eye, A Life for a Life; The Victims; Victims and Relatives Share Views on McVeigh's Execution* (ABC television broadcast, May 4, 2001).

educated the public about the lethal injection procedure itself and some of the potential hazards associated with it.⁴³⁷ For these reasons, some death penalty opponents consider lethal injection to be inhumane and not the “deep sleep” it appears to be.⁴³⁸ Although far less publicized, the events also gave some visibility to those who actually perform the executions and the toll it takes on them emotionally.⁴³⁹ Regardless of what side the public was on, lethal injection appeared to be a paradox revealing the complexities of the execution process as well as the death penalty itself.

VIII. CONCLUSION

The execution methods debate is played out in terms of legislative decision-makers, who oftentimes turn a blind eye to the concerns of those who actually have to kill.⁴⁴⁰ In turn, a considerable portion of doctors, nurses, and other medical personnel willingly participate in executions. Prison officials face the worst of both worlds: they have limited political clout by which to make their choices known, and minimal guidance provided by those who make the choices for them. The process is made all the more perplexing because those who report the problems with the system—media witnesses—have questionable credibility when experts attempt to use their accounts in court. “As a result,” in Foucault’s words, “justice no longer takes public responsibility for the violence that is bound up with its practice.”⁴⁴¹ The system becomes literally and symbolically unobservable. In the context of applying execution methods, when justice becomes unobservable, it ceases to exist.

⁴³⁷ Murray, *supra* note 205; *20/20 Friday: An Eye for an Eye, A Life for a Life; The Death House; Warden Burl Cain Describes Death by Lethal Injection* (ABC television broadcast, May 4, 2001).

⁴³⁸ Murray, *supra* note 205.

⁴³⁹ *20/20 Friday: An Eye for an Eye, A Life for a Life; The Executioners; Executions Take High Toll on People Who Perform Them* (ABC television broadcast, May 4, 2001).

⁴⁴⁰ See *supra* notes 165–69, 367 and accompanying text.

⁴⁴¹ FOUCAULT, DISCIPLINE AND PUNISH, *supra* note 2, at 9.

APPENDIX 1

TABLE 1
METHODS OF EXECUTION BY STATE IN 2001*

SINGLE METHOD STATES (29)	
LETHAL INJECTION (27) Arizona • Arkansas • Colorado Connecticut • Delaware Georgia • Illinois • Indiana Kansas • Kentucky • Louisiana Maryland • Mississippi Montana • Nevada New Jersey • New Mexico New York • North Carolina Ohio • Oklahoma • Oregon Pennsylvania • South Dakota Tennessee • Texas • Wyoming	ELECTROCUTION (2) Alabama • Nebraska

CHOICE STATES (9)
LETHAL INJECTION OR HANGING (2) New Hampshire • Washington
LETHAL INJECTION OR FIRING SQUAD (2) Idaho • Utah
LETHAL INJECTION OR ELECTROCUTION (3) Florida • South Carolina • Virginia
LETHAL INJECTION OR LETHAL GAS (2) California • Missouri

*Statutory and case law documentation for each state can be found in *infra* app. 2.

TABLE 2
CHANGES FROM ELECTROCUTION TO LETHAL INJECTION BY STATE
1888-1953*

Y E A R	S T A T E	HANGING TO ELECTROCUTION	ELECTROCUTION TO LETHAL GAS	ELECTROCUTION TO LETHAL INJECTION
1888	NY	NY		
1896	OH	OH		
1898	MA	MA		
1906	NJ	NJ		
1908	VA	VA		
1909	NC	NC		
1910	KY	KY		
1912	SC VT	SC VT		
1913	AR IN NE OK PA TN	AR IN NE OK PA TN		
1923	AL FL TX	AL FL TX		
1924	GA	GA		
1927	IL	IL		
1929	NM	NM		
1935	CT NC	CT	NC	
1939	SD	SD		
1940	LA MS	LA MS		
1949	WV	WV		
1951	OK		OK	

NO CHANGE IN
EXECUTION METHOD

CHANGE IN EXECUTION
METHOD

*Statutory and case law documentation for each state can be found in *infra* app. 2.

TABLE 3
CHANGES FROM ELECTROCUTION TO LETHAL INJECTION BY STATE:
1954–2001*

Y E A R	S T A T E	HANGING TO ELECTROCUTION	ELECTROCUTION TO LETHAL GAS	ELECTROCUTION TO LETHAL INJECTION
1954	MS		MS	
1955	NM		NM	
1965	VT+ WV+			
1977	TX			TX
1982	MA			MA++
1983	AR IL NJ			AR IL NJ
1984	MA+ SD			SD
1990	LA PA			LA PA
1993	OH			OH++
1994	VA			VA++
1995	CT IN NY SC			CT IN NY SC++
1998	KY TN			KY TN
2000	FL GA			FL++ GA
2001	OH++			OH+++

NO CHANGE IN
EXECUTION METHOD

CHANGE IN EXECUTION
METHOD

*Statutory and case law documentation for each state can be found in *infra* app. 2.

+The year these states abolished the death penalty.

++Choice states. For example, if a state (e.g. Massachusetts) changes from one execution method (electrocution) to a choice between that method and a new method (a choice between electrocution and lethal injection in 1982), the new method (lethal injection) only is shown in this table.

+++Formerly a choice state. Ohio is unique in terms of changing from a choice state to a single method state.

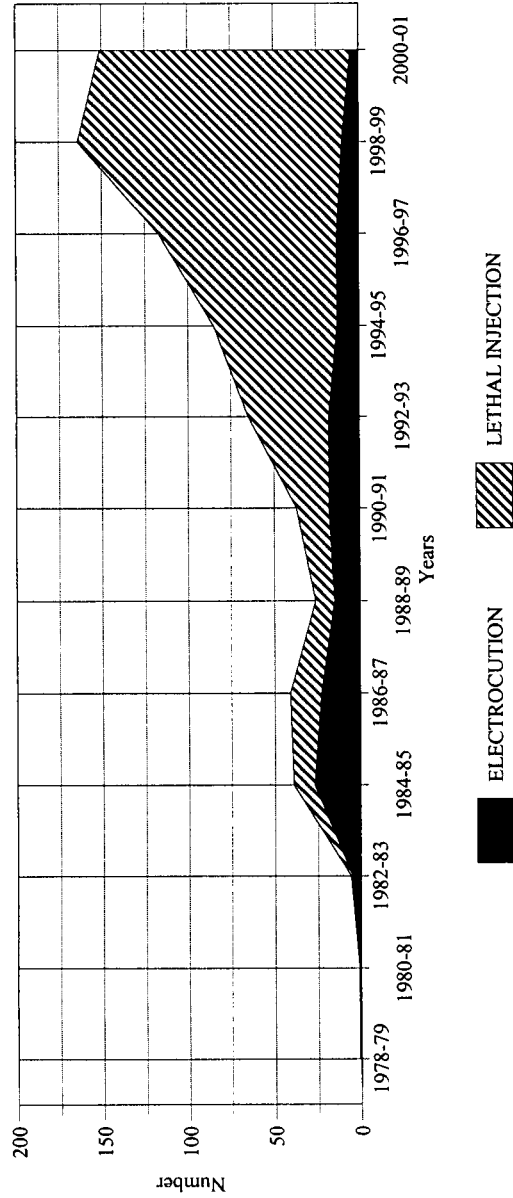
TABLE 4
NUMBERS AND PERCENTAGES OF ELECTROCUTION AND LETHAL
INJECTION EXECUTIONS BY YEAR: 1976-2001*

YEARS	ELECTROCUTION	LETHAL INJECTION	TOTAL
1976	0 (0.00)	0 (0.00)	0 (0.00)
1977	0 (0.00)	0 (0.00)	0 (0.00)
1978	0 (0.00)	0 (0.00)	0 (0.00)
1979	1 100%	0 (0.00)	1 (100%)
1980	0 (0.00)	0 (0.00)	0 (0.00)
1981	1 100%	0 (0.00)	1 (100%)
1982	1 50%	1 50%	2 (100%)
1983	4 100%	0 (0.00)	4 (100%)
1984	16 76%	5 24%	21 (100%)
1985	11 61%	7 39%	18 (100%)
1986	7 39%	11 61%	18 (100%)
1987	16 70%	7 30%	23 (100%)
1988	7 64%	4 36%	11 (100%)

YEARS	ELECTROCUTION	LETHAL INJECTION	TOTAL
1989	8 53%	7 47%	15 (100%)
1990	11 48%	12 52%	23 (100%)
1991	7 50%	7 50%	14 (100%)
1992	8 28%	21 72%	29 (100%)
1993	10 28%	26 72%	36 (100%)
1994	6 21%	23 79%	29 (100%)
1995	7 13%	49 87%	56 (100%)
1996	7 16%	36 84%	43 (100%)
1997	6 8%	68 92%	74 (100%)
1998	7 10%	60 90%	67 (100%)
1999	3 3%	94 97%	97 (100%)
2000	5 6%	80 94%	85 (100%)
2001	0 (0.00)	66 100%	66 (100%)
TOTAL (1977-2001)	149 20%	584 80%	733 (100%)

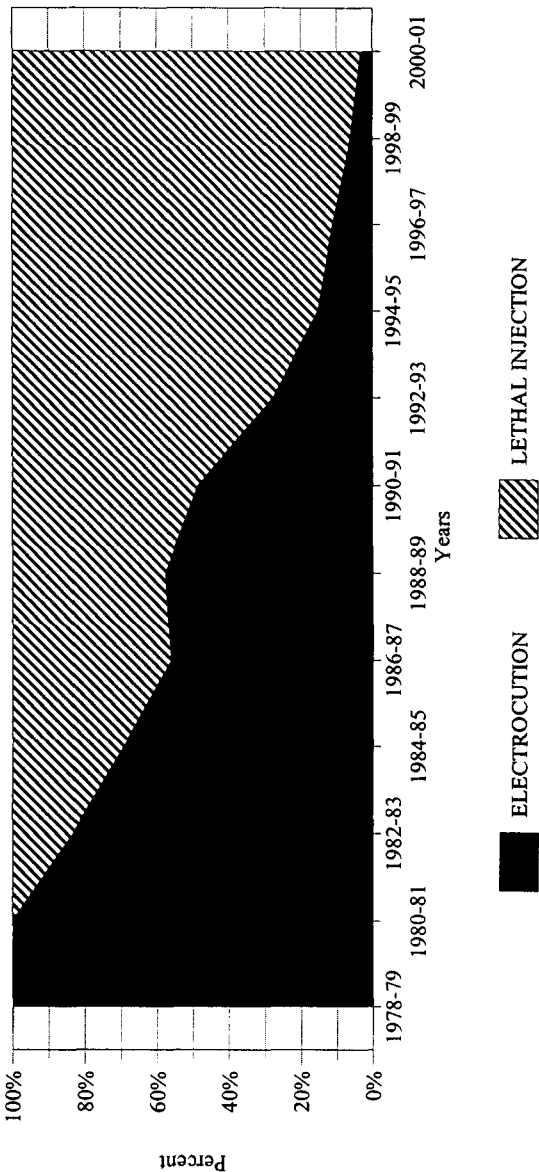
*Death Penalty Information Center, *List of Those Executed by Year Since 1976*, at <http://www.deathpenaltyinfo.org> (last visited January 7, 2002). From 1976 to 2001, executions from other methods (hanging, shooting, and lethal gas) constituted 2.14% of the total number of executions and are excluded from this table.

TABLE 5
NUMBERS OF ELECTROCUTIONS AND LETHAL INJECTIONS:
1976-2001*



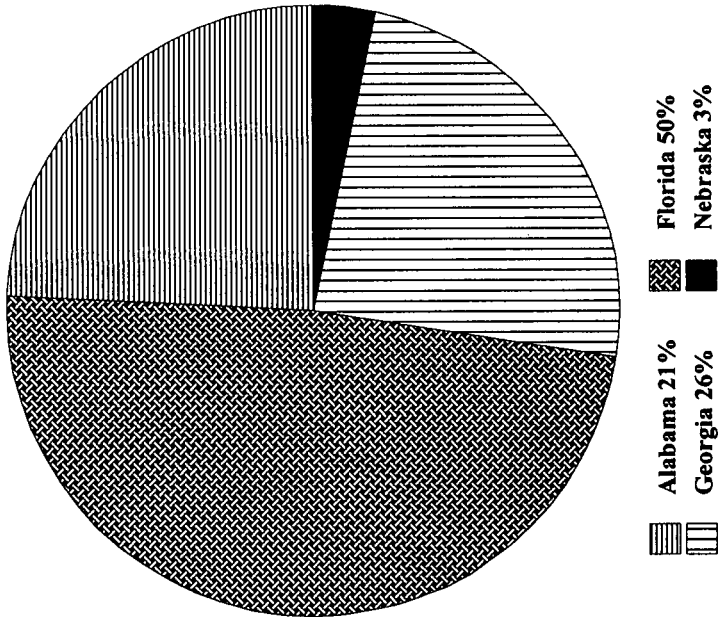
*Death Penalty Information Center, *List of Those Executed by Year Since 1976*, at <http://www.deathpenaltyinfo.org> (last visited January 7, 2002). From 1976 to 2001, executions from other methods (hanging, shooting, and lethal gas) constituted 2.14% of the total number of executions and are excluded from this table.

TABLE 6
PERCENTAGES OF ELECTROCUTIONS AND LETHAL INJECTIONS:
1976-2001*



*Death Penalty Information Center, *List of Those Executed by Year Since 1976*, at <http://www.deathpenaltyinfo.org> (last visited January 7, 2002). From 1976 to 2001, executions from other methods (hanging, shooting, and lethal gas) constituted 2.14% of the total number of executions and are excluded from this table.

TABLE 7
PERCENTAGES OF EXECUTIONS IN KEY ELECTROCUTION STATES: 1976-2001*



*Total number of executions = 91. There were no executions by electrocution in 2001.

TABLE 8*
BOTCHED ELECTROCUTION EXECUTIONS FOLLOWING
*GREGG V. GEORGIA***

1. **John Spenkelink, May 25, 1979, Florida:** It took three separate jolts of electricity spread over five minutes to kill Spenkelink. After the first jolt, smoke filled the room and a three-inch wound was scorched on his right leg.
2. **Frank J. Coppola, August 10, 1982, Virginia:** After a second jolt of electrical current, the death chamber filled with the smell and sizzle of burning as Coppola's head and leg burst into flames.
3. **John Louis Evans III, April 22, 1983, Alabama:** Three separate jolts over fourteen minutes were required to kill Evans. Flames erupted from the electrode tied to his leg, and smoke was seen coming from his head and leg.
4. **Robert W. Williams, December 14, 1983, Louisiana:** When the electricity was applied, smoke and sparks appeared from Williams's head. Witnesses reported the smell of "burning flesh" and "excessive burning."
5. **Alpha Otis Stephens, December 12, 1984, Georgia:** It took two two-minute jolts of 2,080-volt electricity, eight minutes apart, to kill Stephens. After the first jolt, doctors had to wait six minutes for the body to cool down before examining it. During this time, Stephens took about twenty-three breaths.
6. **William E. Vandiver, October 16, 1985, Indiana:** Indiana's seventy-two-year-old electric chair took over seventeen minutes and five jolts of electricity to kill Vandiver.
7. **Alvin Moore, June 9, 1987, Louisiana:** When examined after his execution, Moore was severely burned on the top of his head and his epidermis was found to be missing in a wide circular pattern.
8. **Wayne Robert Felde, March 15, 1988, Louisiana:** Felde's body evidenced severe third and fourth degree burns. His leg was mutilated, his skin was coming loose, and "chunks of skin" had been "burned off the left side of his head . . . revealing his skull bone."
9. **Horace F. Dunkins, July 14, 1989, Alabama:** An incorrectly wired chair took nineteen minutes to kill the mentally retarded Dunkins.

10. Jesse Joseph Tafero, May 4, 1990, Florida: For four minutes, the executioner applied three 2,000-volt jolts of electricity, causing flames to shoot from Tafero's head. The medical examiner could not determine whether Tafero survived the first two jolts.

11. Robert T. Boggs, July 19, 1990, Virginia: Boggs required two fifty-five second applications of 2,500-volts of electricity.

12. Wilbert Lee Evans, October 17, 1990, Virginia: During the execution, blood poured from Evans's eyes and nose. Witnesses heard an audible moan, suggesting suffering.

13. Derick Lynn Peterson, August 22, 1991, Virginia: Peterson's death occurred after thirteen minutes and two separate jolts of electricity. After the first series of jolts, Peterson's heart appeared to still be beating.

14. Roger Keith Coleman, May 20, 1992, Virginia: Executioners applied two 1,700-volt jolts to kill Coleman. A witness spoke of smoke coming from Coleman's leg during the execution.

15. Gregory Resnover, December 8, 1994, Indiana: When the electricity was applied, Resnover rose suddenly "from his chair in a giant spasm . . . His head jerked back and smoke and spark-like flames came out of the top of his head."

16. Jerry White, December 4, 1995, Florida: There were reports that White lunged and screamed during his execution.

17. Larry Lonchar, November 14, 1996, Georgia: Lonchar moaned and "seemed to gasp for air" as the executioner applied two jolts of 2,000 volts each to Lonchar's body before he was pronounced dead.

18. Pedro Medina, March 25, 1997, Florida: "Blue and orange flames up to a foot long shot from the right side of Mr. Medina's head and flickered for six to ten seconds, filling the execution chamber with smoke."

19. Allen Lee Davis, July 8, 1999, Florida: After being jolted with 2,300 volts, blood poured from Davis's face, and soaked a large portion of his shirt. Testimony indicated that the strap placed across Davis's mouth hindered his breathing and partially asphyxiated him prior to and during the electrocution.

*Documentation for, and fuller descriptions of, each botched electrocution can be found in Denno, *Electrocution*, *supra* note 1, at 664-74, and Denno, *Getting to Death*, *supra* note 1, at 412-24, as supplemented by *Provenzano v. Moore*, 744 So.2d 413, 414, 433-35 (Fla. 1999) (Shaw, J., dissenting) (describing the Allen Lee Davis execution on July 8, 1999).

**423 U.S. 153 (1976).

TABLE 9*
BOTCHED LETHAL INJECTION EXECUTIONS FOLLOWING
*GREGG V. GEORGIA***

1. **Charles Brooks, Jr., December 7, 1982, Texas:** In what was the first execution by lethal injection, an overdose of sodium thiopental took seven minutes to kill Brooks. Witnesses stated that Brooks “had not died easily.”
2. **James D. Autry, March 14, 1984, Texas:** Autry took ten minutes to die, complaining of pain throughout. Officials suggested that faulty equipment or inexperienced personnel were to blame.
3. **Thomas Andy Barefoot, October 30, 1984, Texas:** A witness stated that after emitting a “terrible gasp,” Barefoot’s heart was still beating after the prison medical examiner had declared him dead.
4. **Stephen Peter Morin, March 13, 1985, Texas:** It took technicians over forty minutes to locate a suitable vein to insert the lethal injection needle, and another eleven minutes for Morin to die.
5. **Randy Woolls, August 20, 1986, Texas:** Because of his history of drug addiction, Woolls had to assist execution technicians in finding an adequate vein for insertion.
6. **Elliot Rod Johnson, June 24, 1987, Texas:** Johnson’s execution was plagued by repetitive needle punctures and took executioners approximately thirty-five minutes to find a vein.
7. **Raymond Landry, December 13, 1988, Texas:** Two minutes into the execution, after a lengthy search for an adequate vein, the syringe came out of Landry’s vein, “spewing deadly chemicals toward startled witnesses.”
8. **Stephen McCoy, May 24, 1989, Texas:** In a violent reaction to the drugs, which experts attributed to a weak dosage, McCoy “choked and heaved” during his execution.
9. **George “Tiny” Mercer, January 6, 1990, Missouri:** A medical doctor was required to perform a cutdown on Mercer’s groin.
10. **George Gilmore, August 31, 1990, Missouri:** According to a witnessing doctor, force was used to stick the needle into Gilmore’s arm.
11. **Charles Troy Coleman, September 10, 1990, Oklahoma:** Technicians had difficulty finding a vein and the execution was delayed by ten minutes.
12. **Charles Walker, September 12, 1990, Illinois:** There was some indication that, while appearing calm on the outside due to the paralyzing drugs, Walker suffered excruciating pain. There were reports of faulty equipment and inexperienced personnel.

13. Maurice Byrd, August 23, 1991, Missouri: The machine used to inject the lethal dosage malfunctioned.

14. Rickey Ray Rector, January 24, 1992, Arkansas: It took almost an hour for a team of eight to find a suitable vein. Eventually, Rector himself assisted in finding the vein.

15. Robyn Lee Parks, March 10, 1992, Oklahoma: There were reports that Parks violently gagged and bucked in his chair after the drugs were administered. One witness said that his death looked "painful and inhumane."

16. Billy Wayne White, April 23, 1992, Texas: White's death required forty-seven minutes because executioners had difficulty finding a vein that was not severely damaged from years of heroin abuse.

17. Justin Lee May, May 7, 1992, Texas: According to a witness, May gasped and reared against his restraints during his nine-minute death.

18. John Wayne Gacy, May 10, 1994, Illinois: Complications caused by a faulty delivery tube resulted in Gacy's execution lasting eighteen minutes.

19. Emmitt Foster, May 3, 1995, Missouri: Foster took twenty-nine minutes to die. The delay was attributed to the difficulty in finding an adequate vein and incorrectly fitted equipment.

20. Ronald Allridge, June 8, 1995, Texas: Allridge's execution was conducted with only one needle, rather than the standard two, because a suitable vein could not be found in his left arm.

21. Richard Townes, Jr., January 23, 1996, Virginia: It took twenty-two minutes for medical personnel to find an adequate vein.

22. Tommie J. Smith, July 18, 1996, Indiana: The execution team required a total of thirty-six minutes to find a vein. Officials acknowledged that they had known beforehand that Smith's unusually small veins might cause problems.

23. Luis M. Mata, August 22, 1996, Arizona: Mata remained strapped to a gurney with the needle in his arm for one hour and ten minutes while his attorneys argued his case. When injected, his head jerked, his face contorted, and his chest and stomach sharply heaved.

24. Scott Dawn Carpenter, May 8, 1997, Oklahoma: Carpenter gasped and shook for three minutes following the injection. He was pronounced dead eight minutes later.

25. Michael Eugene Elkins, June 13, 1997, South Carolina: Liver and spleen problems had caused Elkins's body to swell, requiring executioners to search almost an hour – and seek assistance from Elkins – to find a suitable vein.

26. Joseph Cannon, April 23, 1998, Texas: Cannon's vein collapsed and the needle popped out after the first injection. These events caused him to make a second final statement and be injected a second time behind a closed curtain.

27. Genaro Ruiz Camacho, August 26, 1998, Texas: Camacho's execution was delayed approximately two hours due to last-minute appeals and problems finding suitable veins in Camacho's arms, which had been damaged by his drug problem.

28. Roderick Abeyta, October 5, 1998, Nevada: The execution team took twenty-five minutes to find a vein suitable for the lethal injection.

29. Bennie Demps, June 8, 2000, Florida: The execution team had to forfeit the second injection (Florida protocol demands two injections) after a thirty-three minute search failed to locate a suitable second vein. Demps complained of pain and bleeding in his final statement.

30. Bert Leroy Hunter, June 28, 2000, Missouri: In a violent reaction to the drugs, Hunter lost consciousness and his body convulsed against his restraints during what one witness called "a violent and agonizing death."

31. Joseph Martinez High, November 7, 2001, Georgia: For twenty minutes, prison technicians attempted unsuccessfully to locate a vein in High's arms. Eventually, they inserted a needle in High's chest, after a doctor cut an incision there, while they inserted the other needle in one of High's hands.

*Documentation for, and fuller descriptions of, each botched execution can be found in Denno, *Getting to Death*, *supra* note 1, at 428–38 (for executions 1–23); Michael J. Radelet, *Post-Furman Botched Executions*, in *FACING THE DEATH PENALTY: ESSAYS ON A CRUEL AND UNUSUAL PUNISHMENT* (Michael L. Radelet ed., 1989), available at <http://www.deathpenaltyinfo.org/botched.html> (last visited Jan. 7, 2002) (for executions 24–26, 28–30); Michael Gretzky, *Killer Executed for Triple Slaying in 1988 Kidnap*, *AUSTIN-AMERICAN STATESMAN*, Aug. 7, 1998, at B8 (for execution 27); and Doug Gross, *Lethal Injection Draws Criticism; Anti-death Penalty Foe Upset That Killer's Vein Was Hard to Find*, *JACKSONVILLE (FLA.) TIMES-UNION*, Nov. 12, 2001, at B1 (for execution 31).

**423 U.S. 153 (1976).

TABLE 10
TYPES OF LETHAL INJECTION STATUTES

I. LETHAL INJECTION ONLY

These statutes (for twenty-seven states) provide no alternative method of execution for prisoners sentenced or convicted after the date the statute was enacted or became effective.¹ There are three general types of lethal injection-only statutes:

(A) Type A statutes (for eleven states) refer to an injection of a “substance or substances in a quantity sufficient to cause death,” or language close to that wording.²

(B) Type B statutes (for thirteen states) refer to a “lethal quantity of an ultrashort-acting barbiturate or other similar drug in combination with a chemical paralytic agent until death,” or language close to that wording.³

(C) Type C statutes (for one state) refer simply to “lethal injection.”⁴

¹ See *supra* app. 1, tbl.1, “Lethal Injection Only” states.

² The eleven states are Arizona, Connecticut, Delaware, Georgia, Indiana, Kansas, Kentucky, Louisiana, New York, Ohio, Texas. See ARIZ. CONST. art. XXII, § 22; ARIZ. REV. STAT. ANN. § 13-704(A) (West 2001); CONN. GEN. STAT. ANN. § 54-100 (West Supp. 2001); DEL. CODE ANN. tit. 11, § 4209(f) (1995); GA. CODE ANN. § 17-10-38(a) (Supp. 2001); IND. CODE ANN. § 35-38-6-1(a) (West 1998); KAN. STAT. ANN. § 22-4001(a) (1995) (“in a swift and humane manner”); KY. REV. STAT. ANN. § 431.220(a)–(b) (Michie 1999); LA. REV. STAT. ANN. § 15:569(B) (West 1992); N.Y. CORRECT LAW § 658 (McKinney Supp. 2001); H.B. 362, 124th Gen. Assem., Reg. Sess. (Ohio 2001); TEX. CRIM. PROC. CODE ANN. art. 43.14 (Vernon Supp. 2001).

³ There are variations in the wording of the following lethal injection statutes, depending on the state. The thirteen states are Arkansas, Illinois, Maryland, Mississippi, Montana, New Jersey, New Mexico, North Carolina, Oklahoma, Oregon, Pennsylvania, South Dakota, Wyoming. See ARK. CODE ANN. § 5-4-617(a) (Michie 1997); 725 ILL. COMP. STAT. ANN. 5/119-5(a)(1) (West 1992); MD. CODE ANN., CRIMES & PUNISHMENTS § 71(a) (1996) (“until death is pronounced by a licensed physician”); see also *id.* § 627; MISS. CODE ANN. § 99-19-51 (1999); MONT. CODE ANN. § 46-19-103(3) (2001); N.J. STAT. ANN. § 2C:49-2 (West 1995) (“[p]rior to the injection of the lethal substance, the person shall be sedated by a licensed physician, registered nurse, or other qualified personnel, by either an oral tablet or capsule or an intramuscular injection of a narcotic or barbiturate such as morphine, cocaine or demerol”); N.M. STAT. ANN. § 31-14-11 (Michie Supp. 2000); N.C. GEN. STAT. § 15-187 (1999); OKLA. STAT. ANN. tit. 22, § 1014(A) (West 1986); OR. REV. STAT. § 137.473(1) (Supp. 1988); 61 PA. CONS. STAT. ANN. § 3004(a) (West 1999); S.D. CODIFIED LAWS § 23A-27A-32 (Michie 1998); WYO. STAT. ANN. § 7-13-904(a) (Michie 2001).

⁴ The one state is Tennessee. See TENN. CODE ANN. § 40-23-114 (Supp. 2000).

Statutes for two states depart slightly from Type A and Type B.⁵

II. LETHAL INJECTION OR OTHER EXECUTION METHOD—PRISONER'S CHOICE

These statutes (for six states) allow prisoners to choose between lethal injection and another method of execution.⁶

III. LETHAL INJECTION OR OTHER EXECUTION METHOD—ANOTHER PERSON'S CHOICE

These statutes (for three states) allow someone other than the prisoner to choose the execution method, or the statute is unclear about who makes this choice.⁷

⁵ The two states are Colorado and Nevada. See COLO. REV. STAT. § 16-11-401 (2000) ("sodium thiopental or other equally or more effective substance sufficient to cause death"); NEV. REV. STAT. ANN. § 176.355(1) (Michie 2001) ("a lethal drug").

⁶ The six states and the other methods they have selected are as follows: *Lethal Injection or Hanging*: Washington. See WASH. REV. CODE ANN. § 10.95.180(1) (West 1990) ("hanging by the neck" or Type A). *Lethal Injection or Firing Squad*: Utah. See UTAH CODE ANN. § 77-18-5.5 (1999) ("either a firing squad or a lethal intravenous injection"). *Lethal Injection or Electrocution*: Florida, South Carolina, Virginia. See FLA. STAT. ANN. § 922.105(1) (West 2001) ("lethal injection, unless the person sentenced to death affirmatively elects to be executed by electrocution"); S.C. CODE ANN. § 24-3-530(A) (Law Co-op. Supp. 2000) ("[The convicted] shall suffer the penalty by electrocution or, at the election of the person, lethal injection If the person waives the right of election, the penalty must be lethal injection."); VA. CODE ANN. § 53.1-233 (Michie 1998) ("by electrocution or by" Type A); 1994 Va. Acts ch. 921 § 1 ("The method of execution shall be chosen by the prisoner."). *Lethal Injection or Lethal Gas*: California. See CAL. PENAL CODE § 3604(a)–(b) (West 2000) (lethal gas or Type A).

⁷ *Lethal Injection or Hanging*: New Hampshire. See N.H. REV. STAT. ANN. § 630:5(XIII)–(XV) (1986) ("XIII. [Type B]; XIV. The commissioner of corrections or his designee shall determine the substance or the substances to be used"; if it is "impractical," death will be by "hanging."). *Lethal Injection or Firing Squad*: Idaho. See IDAHO CODE § 19-2716 (Michie 1997) The Code states:

The director of the department of corrections shall determine the substance or substances to be used . . . provided, however, that, in any case where the director finds it to be impractical . . . for the reason that it is not reasonably possible to obtain expert technical assistance, should such be necessary to assure that infliction of death by [Type B] can be carried out in a manner which causes death without unnecessary suffering, the sentence of death may be carried out by firing squad.

Id. *Lethal Injection or Lethal Gas*: Missouri. See MO. ANN. STAT. § 546.720 (West Supp. 2001) ("The manner of inflicting death shall be by . . . lethal gas . . . or lethal injection."); see also *infra* app. 2 (Missouri) (explaining that, in practice, the Director of the Missouri Department of Corrections decides which method to use for an execution; lethal injection is the Director's method of choice now and for the foreseeable future).

IV. LETHAL INJECTION AND PRE-ENACTMENT PRISONER'S CHOICE

These statutes (for five states) apply to states that now have a lethal injection-only statute enacted, but provide pre-enactment prisoners a choice between lethal injection and the method that existed when the prisoner was convicted or sentenced to death.⁸

V. LETHAL INJECTION AND NO PRE-ENACTMENT CHOICE

This statute (for Louisiana only) mandates that a pre-enactment prisoner use the method of execution that existed when the prisoner was sentenced to death (electrocution), even though the state has now enacted a lethal-injection only statute.⁹ Notably, Louisiana executes all inmates with lethal injection even if they were sentenced before the legislative enactment because prison officials have

⁸ *Lethal Injection or Hanging*: Delaware. See DEL. CODE ANN. tit. 11, § 4209(f) (1995) (by Type A); 65 Del. Laws 281 § 3 (1986) (“[t]his Act shall become effective only for acts committed after its enactment [June 13, 1986] except that any person sentenced to death for acts committed prior to the enactment of this act shall be permitted to elect [Type A] . . . as the method [rather than “hanging by the neck”]”; see also *infra* app. 2 (Delaware) (noting that only one inmate remains who can choose hanging). *Lethal Injection or Electrocution*: Arkansas, Kentucky, South Carolina. See ARK. CODE ANN. § 5-4-617 (a)(1), (b) (Michie 1997) (By Type B “until the defendant’s death is pronounced according to accepted standards of medical practice.” According to 1983 Ark. Acts 774 § 2, lethal injection applied only to offenses committed after July 4, 1983. However, 1983 Ark. Acts 774 § 3 provided that any defendant sentenced to death by electrocution prior to July 4, 1983, could elect to be executed by lethal injection.); see also *infra* app. 2 (Arkansas) (noting that two inmates remain who can choose electrocution); KY. REV. STAT. ANN. § 431.220 (a)–(b) (Michie 1999) (“Prisoners who receive a death sentence prior to March 31, 1998, shall choose [lethal injection] or the method of execution known as electrocution . . . If the prisoner refuses to make a choice . . . the method shall be by lethal injection.”); see also *infra* app. 2 (Kentucky) (noting that 30 inmates remain who can choose electrocution); S.C. CODE ANN. § 24-3-530(A)–(C) (Law Co-op. Supp. 2000) (“(B) A person convicted . . . prior to the effective date . . . must be administered . . . electrocution unless the person elects death by lethal injection.”); see also *infra* app. 2 (South Carolina) (noting that inmates remain who can choose electrocution). *Lethal Injection or Lethal Gas*: Arizona. ARIZ. CONST., art. XXII, § 22 (Type A “except that defendants sentenced to death for offenses committed prior to the effective date of the amendment to this section shall have the choice of either lethal injection or lethal gas”); ARIZ. REV. STAT. ANN. § 13-704(B) (West 2001) (“if the defendant fails to choose . . . [it will be] by lethal injection”); see also *infra* app. 2 (Arizona) (noting that fifty-eight inmates remain who can choose lethal gas). Although Maryland maintains a choice statute (lethal gas or lethal injection) for pre-enactment prisoners, no inmates remain who are eligible to make this choice. Therefore, Maryland’s choice provision no longer has practical significance. See *infra* app. 2 (Maryland).

⁹ See LA. REV. STAT. ANN. § 15:569 (A)–(B) (West 1992) (providing for execution by electrocution for inmates sentenced to death prior to September 15, 1991, and execution by lethal injection for inmates sentenced to death after September 15, 1991).

dismantled the electric chair.¹⁰ Although other statutes technically fall into this category based on their wording,¹¹ they are essentially moot because there were no pre-enactment prisoners eligible to receive the earlier execution method.

VI. LETHAL INJECTION AND CONSTITUTIONAL SUBSTITUTES

These statutes (for ten states) provide a constitutional substitute in case lethal injection is held to be unconstitutional or invalid.¹²

¹⁰ Telephone Interview with Cathy Fontenot, Director of Classification, Louisiana State Penitentiary (Aug. 22, 2001) (noting that after Louisiana's 1991 switch to lethal injection, all death warrants issued by judges have specified execution by lethal injection irrespective of the wording of the Louisiana state statute; on July 22, 1990, Andrew Jones was the last person executed by electrocution in Louisiana).

¹¹ New Mexico falls into this category. 1979 N.M. Laws 150 § 8 (lethal injection); N.M. STAT. ANN. § 31-14-11 (Michie Supp. 2000) (lethal injection) ("All references in the laws of the state of New Mexico relating to execution by electrocution or by lethal gas shall, insofar as such provisions are applicable, apply to, and mean, execution by means of injection, except as to capital offenses already committed."); *see also infra* app. 2 (New Mexico).

¹² *Lethal Injection or Hanging*: Delaware, New Hampshire. *See* DEL. CODE ANN. tit. 11, § 4209(f) (1995) (if Type A is held unconstitutional, then by "hanging by the neck"); 1986 N.H. Laws § 82:3 (if Type B is held unconstitutional, then by hanging). *Lethal Injection or Electrocution*: Arkansas, Illinois, South Carolina. *See* ARK. CODE ANN. § 5-4-617(a)(1), (b) (Michie 1997) (if Type B is held unconstitutional, then by electrocution); 725 ILL. COMP. STAT. ANN. 5/119-5(a)(2) (West 1992) (if Type B is held unconstitutional, then by electrocution); S.C. CODE ANN. § 24-3-530(C) (Law Co-op. Supp. 2000) ("(C) If lethal injection . . . is held to be unconstitutional, . . . then [death] by electrocution."). *Lethal Injection or Electrocution or Firing Squad*: Oklahoma. *See* OKLA. STAT. ANN. tit. 22, § 1014(A)-(C) (West 1986) (If Type B is held unconstitutional, then by electrocution; if electrocution is held unconstitutional, then by firing squad). *Lethal Injection or Lethal Gas*: California, Wyoming. *See* CAL. PENAL CODE § 3604(d) (West 2000) ("if either manner of execution described in subdivision (a) [lethal gas or Type A] is held invalid, the punishment of death shall be imposed by the alternative means specified in subdivision (a) [lethal gas or Type A]"); WYO. STAT. ANN. § 7-13-904(b) (Michie 2001) (if Type B is held unconstitutional, then by lethal gas). *Any Constitutional Method of Execution*: Florida, Ohio. *See* FLA. STAT. ANN. § 922.105(3) (West 2001) ("If electrocution or lethal injection is held to be unconstitutional . . . all persons sentenced to death for a capital crime shall be executed by any constitutional method of execution."); H.B. 362, 124th Gen. Assem., Reg. Sess. (Ohio 2001) ("If a person is sentenced to death, and if the execution of a death sentence by lethal injection has been determined to be unconstitutional, the death sentence shall be executed by using any different manner of execution prescribed by law subsequent to the effective date of this amendment . . .").

TABLE 11*
TYPES OF LETHAL INJECTION CHEMICAL COMBINATIONS,
BY STATE FOR 36 STATES

Information Is Confidential (4 States)	
Nevada	Pennsylvania
South Carolina	Virginia**

Information Does Not Exist (3 States)	
Kansas	Kentucky
New Hampshire	

Sodium Thiopental, Pancuronium Bromide, Potassium Chloride*** (27 States)		
Arizona	Arkansas**	California
Colorado**	Connecticut**	Delaware
Florida**	Georgia**	Idaho
Illinois	Indiana**	Louisiana
Maryland**	Mississippi**	Missouri
Montana**	New Mexico**	New York**
Ohio	Oklahoma**	Oregon
South Dakota**	Tennessee**	Texas**
Utah	Washington**	Wyoming

Sodium Thiopental, Pancuronium Bromide (1 State)
North Carolina**

(Two Trays) 1. Saline and Potassium Chloride, 2. Saline and Sodium Thiopental (1 State)
New Jersey**

* All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The sources for the protocols and communications can be found in *infra* app. 1, tbl. 20, app. 3.

** The state's lethal injection protocol specifically mentions saline.

*** Sodium thiopental also is known as thiopental sodium or its brand name, sodium pentothol. Pancuronium bromide also is commonly referred to as its brand name, pavulon. States use all of these names in their statutes. This table lists only the generic names of these chemicals.

TABLE 12
THE PERCENTAGES OF STATES USING DIFFERENT LETHAL INJECTION CHEMICAL COMBINATIONS

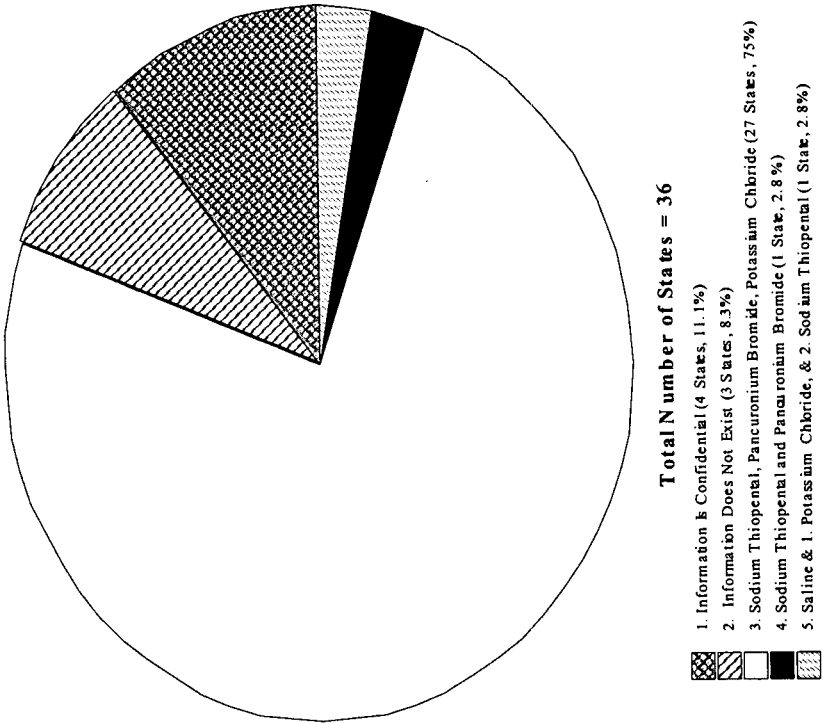
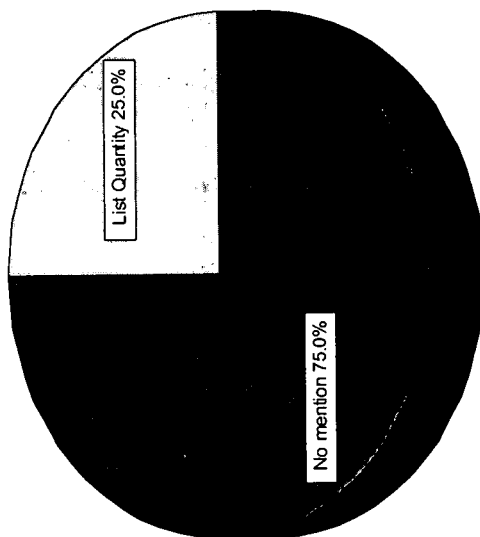


TABLE 13
TYPES OF LETHAL INJECTION CHEMICAL SPECIFICATIONS FOR 36 STATES

States that Specify the Quantity of the Chemical Injection



States that Specify Saline in the Injection Procedure

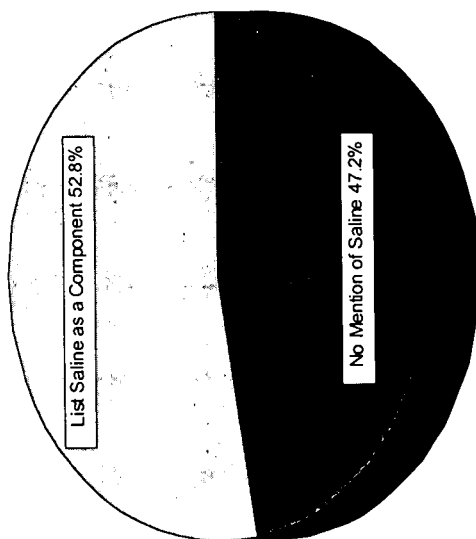


TABLE 14*
LETHAL INJECTION CHEMICAL SPECIFICATIONS, BY STATE
FOR 36 STATES

States that Specify Quantities of Lethal Injection Chemicals (9)		
California	Connecticut	Florida
Mississippi	Montana	New Mexico
North Carolina	Tennessee	Washington

States that do not Specify Quantities of Lethal Injection Chemicals (27)			
Arizona	Arkansas	Colorado	Delaware
Georgia	Idaho	Illinois	Indiana
Kansas**	Kentucky**	Louisiana	Maryland
Missouri	Nevada**	New Hampshire**	New Jersey
New York	Ohio	Oklahoma	Oregon
Pennsylvania	S. Carolina**	South Dakota	Texas
Utah	Virginia**	Wyoming	

States that Specify Saline in Their Lethal Injection Procedures (19)			
Arkansas	Colorado	Connecticut	Florida
Georgia	Indiana	Maryland	Mississippi
Montana	New Jersey	New Mexico	New York
N. Carolina	Oklahoma	South Dakota	Tennessee
Texas	Virginia	Washington	

States that do not Specify Saline in Their Lethal Injection Procedures (17)			
Arizona	California	Delaware	Idaho
Illinois	Kansas**	Kentucky**	Louisiana
Missouri	Nevada**	New Hampshire**	Ohio
Oregon	Pennsylvania	South Carolina**	Utah
Wyoming			

* All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The sources for the protocols and communications can be found in *infra* app. 1, tbl. 20, app. 3.

** These states did not provide any information whatsoever.

TABLE 15*
THE QUANTITIES OF LETHAL INJECTION CHEMICALS FOR THE NINE STATES
THAT SPECIFY THEM

State	Chemicals Specified in State Protocols
California	5.0 g of sodium pentothal in 20-25 cc of diluent. 50 cc of pancuronium bromide. 50 cc of potassium chloride.
Connecticut	2,500 mg thiopental sodium in 50 ml of clear sodium chloride 0.9% solution of an approximate concentration of mg/ml or 5%. 100 mg of pancuronium bromide (contents of ten 5 ml vials of 2 mg/ml concentration) in 50 ml. 120 mEq of potassium chloride (contents of two 30 ml vials of 2 mEq/ml concentration) in 60 ml.
Florida	"No less than" 2 g of sodium pentothal. Next, a saline solution to act as a flushing agent. Next, no less than 50 mg of pancuronium bromide. Then saline, again as a flushing agent. Finally, no less than 150 mEq of potassium chloride.
Mississippi	Sodium pentothal, 2.0 g, 1 syringe. Normal saline, 10-15cc., 2 syringes. Pavulon, 50 mg per 50 cc., 3 syringes. Potassium chloride, 50 mEq per 50 cc., 3 syringes.
Montana	Sodium pentothal, 500 mg w/ diluent. Pavulon, 10 mg ampules. Potassium chloride, 10 mEq ampules. Saline, 1000 C. lidocaine HCL, 2% w/ epinephrine.
New Mexico	Two 50-cc syringes each containing 10-50cc of sterile normal saline. Three 50-cc syringes each containing 50 mEq of potassium chloride in 50-cc. Three 50-cc syringes each containing 50 mg of pavulon in 50-cc. One 50-cc syringe containing 210[sic]g** of sodium pentothal (contents of four 500 mg vials dissolved in the least amount of diluent possible to attain complete, clear suspension). Order of chemicals to be sodium pentothal first, pavulon second, and potassium chloride last.
North Carolina	Three each 1000 ml saline. Four vials of thiopental sodium 5 g, 100 ml each. Twelve vials pavulon 5 ml each.
Tennessee	Sodium pentothal (50 cc). Saline (50 cc). Pancuronium (2) (50 cc). Saline (50 cc). Potassium chloride (2) (50 cc).
Washington	2g/50cc thiopental sodium. 15 cc normal saline. 50 mg/50 cc pancuronium bromide. 15 cc normal saline. 1.50-2.70 mEq/kg potassium chloride (Kcl).

*All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The sources for the protocols and communications can be found in *infra* app. 1, tbl. 20, app. 3. Much of the wording in this table is taken verbatim from the protocols.

**A typo. The amount should be 2.0 g of sodium pentothal. This corrected amount of sodium pentothal is specified in another section of New Mexico's protocol. See *infra* app. 3 (New Mexico).

TABLE 16*
LAST MEAL AND EXECUTION TIME SPECIFIED IN THE LETHAL INJECTION
PROTOCOLS OR COMMUNICATIONS OF 36 STATES

State	Time of the Last Meal	Time of the Execution
AZ	Does provide information about what condemned inmates have requested but doesn't specify the guidelines for the last meal or what the inmates can request.	In documentation provided by the State, there is reference to one execution that begins at 12:05 or later and the senior warden is the one to signal for the execution to begin.
AR	Will be handled by the warden at the unit. Items within reason will be provided.	No information is provided in the protocol.
CA	About 6:00 p.m., the day before the execution, the inmate will be moved to the death watch cell which is adjacent to the execution chamber. Soon after he/she is rehoused, the inmate will be served his/her last dinner meal. The prison makes every effort to provide the meal requested by the inmate. Between 7 and 10 p.m. he/she can request special food items and coffee or soft drinks.	Does not specify the time.
CO	Will be served at normal meal time. The meal will consist of anything within reason that is stocked by the Food Service Department.	No information is provided in the protocol.
CT	The inmate shall be served the same food as other inmates at the normal meal time. At the discretion of the warden, reasonable efforts may be made to provide a last meal of the inmate's choosing.	At 2:01 a.m., or as soon thereafter as possible, the warden shall direct the executioner(s) to begin injection of the lethal substance.
DE	No information provided in the protocol.	No information is provided in the protocol.

* All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The sources for the protocols and communications can be found in *infra* app. 1, tbl. 20, app. 3. Much of the wording in this table is taken verbatim from the protocols.

TABLE 16, CONT.

State	Time of the Last Meal	Time of the Execution
FL	Prior to the execution, an inmate may request a last meal. To avoid extravagance, the food to prepare the last meal must cost no more than \$20 and must be purchased locally.	Noted in the beginning of the protocol is the following: "The times established in these procedures are guidelines and may be altered to the extent necessary to assure that an execution is carried out properly and effectively. For executions scheduled for 7:01 a.m., the following time frames generally apply. If an execution is scheduled for any other time of the day, comparable time differences shall be implemented."
GA	Discusses meals but not a last meal.	No information is provided in the protocol.
ID	No information is provided in the protocol.	No information is provided in the protocol.
IL	No information is provided in the protocol.	The execution shall occur on the date set for execution by the court at a time determined by the Department of Corrections.
IN	The inmate is escorted to the holding cell at approximately 6:00 p.m. The final meal, if he/she wishes to have one, is served after he is placed in the holding cell.	Shortly after midnight, the inmate is escorted from the holding cell, and placed on the gurney, secured to the gurney, and moved to the execution room. The inmate is usually pronounced dead between twenty and forty-five minutes after being placed on the gurney.
KS	No information because a protocol does not exist.	No information because a protocol does not exist.
KY	No information because a protocol does not exist.	No information because a protocol does not exist.
LA	No information is provided in the protocol.	The execution shall take place at the Louisiana State Penitentiary between the hours of 6:00 p.m. and 11:59 p.m.
MD	No information is provided in the protocol.	No information is provided in the protocol.
MS	Mentions that the condemned offender is given his meal but is not specific about the time period.	The new law states by 6:00 p.m.

TABLE 16, CONT.

State	Time of the Last Meal	Time of the Execution
MO	No information is provided in the protocol.	No information is provided in the protocol.
MT	No information is provided in the protocol.	The execution shall be performed anytime after midnight on the day set by the court.
NV	The information is confidential.	The information is confidential.
NH	No information because a protocol does not exist.	No information because a protocol does not exist.
NJ	At least twenty-four hours in advance of the scheduled execution, the condemned may request the food of his or her choice to be served at the last regularly scheduled dinner, not less than eight hours prior to the execution. Such a request shall be granted subject to reasonable availability and cost of the food desired.	Upon receipt of the warrant appointing an execution date, the Commissioner shall schedule the time for implementation of the warrant and begin final arrangements.
NM	No information is provided in the protocol.	Given that the witnesses are filed into the North Facility Front Entrance Lobby at 11:45 p.m., one could deduce that the execution takes place at 12:00 a.m.
NY	Upon delivery of the breakfast meal, the inmate may express his/her preference for his/her last meal within reasonable limits as to the kind or type of food.	No information is provided in the protocol.
NC	No information is provided in the protocol.	No information is provided in the protocol.
OH	Approximately six hours prior to the execution, the inmate is given his/her special meal.	All court-ordered executions shall be carried out at 9:00 p.m., on the scheduled execution date.
OK	No information is provided in the protocol.	No information is provided in the protocol.
OR	The inmate's last meal is personally prepared and served about 6:00 p.m., by a staff member assigned by the food services manager.	As soon after midnight as possible, the superintendent signals the executioner to begin injection of lethal solutions into the injection port of the intravenous catheters.

TABLE 16, CONT.

State	Time of the Last Meal	Time of the Execution
PA	The meals the condemned inmate will eat while at SCI Rockview will be the same as those eaten by the rest of the inmate population, except that the individual will be permitted to request one special meal from a menu of available items.	The scheduled time for all executions is 7:00 p.m. on the day designated by the governor's warrant.
SC	No information is provided in the protocol.	No information is provided in the protocol.
SD	The inmate's last meal prior to the execution should be close to the regular feeding time of the general population of inmates. The inmate may request a special diet for his/her last meal but he/she will only be provided with food items that are normally available in the kitchen.	The time of execution shall be left to the discretion of the warden to whom the warrant is directed, who shall cause the execution to be performed between the hours of 12:01 a.m. and 6:00 a.m.
TN	No information is provided in the protocol.	At 1:00 a.m., the warden shall contact the Commissioner to insure that no last minute stay or respite has been granted. The warden then permits the inmate to make a last statement. Next, the warden gives the signal to proceed with the injection.
TX	The last meal will be served at approximately 3:30–4:00 p.m.	Mentions instructions to remove the inmate from the holding cell shortly after 6:00 p.m. but no further information is provided as to the exact time the flow of lethal chemicals begins.
UT	No information is provided in the protocol.	No information is provided in the protocol.
VA	For the last meal the inmate may select any meal, or combination of items, from the institution's twenty-eight day cycle menu. The meal must be completed no later than four hours prior to the execution.	Executions take place at 9:00 p.m., on the date determined by the courts.

TABLE 16, CONT.

State	Time of the Last Meal	Time of the Execution
WA	At the meal period just prior to the time of the execution, the inmate will be allowed to provide his/her meal selection from a menu prepared and provided by the Food Service Manager.	The court specifies in the warrant that the superintendent is responsible for carrying out the execution and notifying the injection team when to begin.
WY	No information is provided in the protocol.	No information is provided in the protocol.

TABLE 17*
 INFORMATION ON EXECUTIONERS AND EXECUTION PROCEDURES SPECIFIED IN THE LETHAL INJECTION
 PROTOCOLS OR COMMUNICATIONS OF 36 STATES: 2001

State	Number and Qualifications of Executioners	Problem Prevention or Procedure	Location of the Execution	Involvement of Medical Personnel
AZ	Thirty-two to thirty-three staff members are required to carry out the execution and provide logistical support. Training, meetings, and pre-execution hearings are part of the process.	There is a line for the governor to call to stop the execution.	AZ State Prison Complex at Florence. Witness room, holding cell, operations room, lethal injection room.	No information is provided in the protocol.
AR	Unpaid volunteers, selected by director of DOC, identity confidential.	There is a line for the governor to call to stop the execution.	Cummins Unit, near Grady.	No information is provided in the protocol.
CA	Three-member staff unit will provide constant death watch.	Mentions a line for the governor to call does not specify that the line is to stop the execution, but that seems implied.	A self-contained unit at San Quentin State Prison that includes: a witness area, execution chamber, anteroom with 3 phones (the injection is administered from here), chemical room, 2 holding cells, kitchen/officer's area.	A physician is present to declare when death occurs. 2 physicians also are listed under "witnesses."

CO	A strap-down team straps the inmate to the execution bed. The injection team is comprised of two anonymous DOC staff.	The warden verifies with the governor that it is ok to proceed with the execution. There is no information available if problems arise.	No information is provided in the protocol.	A coroner pronounces death. <i>There shall also be present a physician. ***</i>
CT	A group of correctional staff: six primary, six alternates. A warden designates executioner(s) with an order to initiate the flow of lethal chemicals. The identity of the executioners is confidential. The warden is responsible for screening, selecting and training the execution staff. The warden will conduct drills with the execution team.	Emergency phone lines are checked and the warden establishes radio contact with a supervisor-in-charge of the execution area to ensure communication is still open even if lines become inoperable. The warden makes a last minute check for any stays.	Osborn Correctional Institution or any other approved DOC facility. The area will consist of: a death cell, execution ante room, execution enclosure, and witness observatory.	The Deputy Commissioner of Programs or his/her designee shall ensure to the satisfaction of a licensed CT physician that executioners are properly trained, including having the ability to properly insert IV. The Dep. Com. also must ensure that a qualified physician is present to certify death.
DE	Staff executioner, voluntary position. The person's identity is confidential.	No information is provided in the protocol.	The Delaware Correctional Center in Smyrna contains a permanent execution chamber.	No information is provided in the protocol.

State	Number and Qualifications of Executioners	Problem Prevention or Procedure	Location of the Execution	Involvement of Medical Personnel
FL	The execution team completes primary and alternate IV and heart monitor setups and will begin the flow of lethal chemicals. The escort team applies restraints, escorts the inmate to the prep room, places the inmate on the execution gurney, and secures restraining straps.	There is an open line to the governor's office. If death doesn't occur after the first administering of lethal chemicals, try a second time and continue until a flat line is indicated on the heart monitor.	Mentions an execution chamber but does not provide a description.	A pharmacist will prepare the lethal injection. A physician will visit the condemned to explain the lethal injection procedure, and will stand behind the executioner while the injection is being administered, as well as certify death. A physician assistant also will certify death. A nurse or medical technician is authorized to attend.
GA	An escort team consists of six correctional officers who assist with attaching restraints to the arms, legs, and body of the condemned. Two members of the IV team will be Emergency Medical Technicians. Three volunteers (staff members) will insert solutions into IV ports during the execution process. Security will attend as needed. A designated staff member will prepare the lethal injection and deliver it to the execution chamber.	The protocol describes what to do if a suitable vein cannot be found. If the condemned shows residual life signs after the staff members have carried out the execution procedure, they are to repeat the procedure. It also mentions open communication to the Central Office Command Post but doesn't mention the governor's office for possible stay.	The Commissioner of GA DOC determines the prison that will be designated as the execution site. Mentions both an execution chamber and an execution witness room but does not describe them.	Two staff physicians to determine if death has occurred. One contract physician. A physician's assistant will administer treatment to witnesses and staff if the need arises. "If the veins are such that an IV cannot be started, a contract physician will perform the cut down procedure to establish an intravenous port" (per protocol 16.3.11).

ID	The Idaho Maximum Security Institution personnel will carry out the execution warrant. The warden is the official executioner by statute.	There is an open line of communication for a possible stay.	Execution trailer located at Idaho Maximum Security Institution.	The coroner will pronounce death.
IL	A trained person will insert the catheter. That person's identity is confidential.	A dedicated line shall be established in case a stay is granted.	The inmate shall be transferred to the correctional center, at which point the execution will take place in the execution chamber as determined by the Director of DOC.	No information is provided in the protocol.
IN	Mentions an execution team and IV team.	Mentions a specific execution where procedures were modified ahead of time because the inmate had "extremely small veins." The team inserted an angiograph. There was a check for stays before continuing with the execution.	Execution room, holding cell.	A physician is to insert the angiograph. <i>A physician is to pronounce death. ***</i>
KS	No information because a protocol does not exist.	No information because a protocol does not exist.	No information because a protocol does not exist.	No information because the protocol does not exist.

State	Number and Qualifications of Executioners	Problem Prevention or Procedure	Location of the Execution	Involvement of Medical Personnel
KY	No information because a protocol does not exist.	No information because a protocol does not exist.	Within the confines of the state penal institution designated by the DOC with an enclosure that will exclude public view.	No information because a protocol does not exist. <i>No physician shall be involved in the conduct of an execution except to certify cause of death provided that the condemned is declared dead by another person.***</i>
LA	There are escorting officers who will assist the inmate onto the table and secure him/her. An IV technician prepares the inmate for execution. The warden designates a competent person to administer the injection.	No mention of a procedure for a possible call to stay of execution.	LA State Penitentiary, in the execution room.	The coroner shall pronounce the inmate dead. A physician will be present.
MD	The Commissioner of Correction designates an execution commander who supervises the process. A technician inserts a needle into a vein on the inmate's arm to begin a flow of saline. At a hidden signal from the warden, a lethal combination of drugs is injected into the IV line.	Discusses stays but doesn't specify if they are prepared to stop the execution at the time it is to take place.	Not clear if at a specific penitentiary or any penitentiary.	No information is provided in the protocol.

MS	A lethal injection team inventories all equipment. The executioner shall advise the superintendent when the system is ready to use.	The superintendent verifies no stays before proceeding with the execution.	Execution room, observation room.	The superintendent requests a physician or coroner to pronounce the inmates' death. Two physicians are listed under the witness list.
MO	No information is provided in the protocol.	No information is provided in the protocol.	No information is provided in the protocol.	No information is provided in the protocol.
MT	The executioner must be selected by the warden and be trained. The executioner need not be a physician, registered nurse, or licensed practical nurse. The warden may also select alternate executioners. The executioners' identity shall remain confidential. Warden or designee shall supervise the execution.	A dedicated line shall be established to the governor's office.	The warden of MT State Prison provides the place where the execution will be carried out. It will be enclosed from public view, be within the walls of the state prison, and shall provide all implements necessary for the execution.	The coroner pronounces death.
NV	There is no information because the protocol is confidential.	There is no information because the protocol is confidential.	The prison is the designated site of executions.	There is no information because the protocol is confidential. <i>The director of the department shall invite a competent physician, the county coroner, and a psychiatrist to be present at the execution. ***</i>

State	Number and Qualifications of Executioners	Problem Prevention or Procedure	Location of the Execution	Involvement of Medical Personnel
NH	No information because a protocol does not exist.	No information because a protocol does not exist.	No information because a protocol does not exist.	No information because a protocol does not exist. <i>A licensed physician pronounces death. ***</i>
NJ	The commissioner designates all execution personnel. The medical prep team consists of two physicians, one registered nurse, one certified IV therapist, and two execution technicians.	Provides instructions on what to do if a vein is not found and warns, "The medication must not be rapidly nor sporadically injected." If a stay is called, executioners are to stop the execution and life saving are techniques to be applied if necessary.	The commissioner shall provide and maintain a suitable and efficient unit enclosed from public view within NJ State Prison. An execution suite and executioner's room are mentioned, but not described.	A physician is to revive an inmate or pronounce him/her dead. <i>Prior to the injection of the lethal substance, the person shall be sedated by a licensed physician, registered nurse, or other qualified personnel, by either an oral tablet or capsule or an intramuscular injection of a narcotic or barbiturate such as morphine, cocaine or demerol. ***</i>

NM	<p>The execution team consists of two persons selected and contracted by the warden. A tie-down team consists of five persons selected and directed by the warden to strap the inmate to the table. The team must go through practice procedures. There are numerous personnel for security purposes.</p>	<p>Warns that if sodium thiopental is not flushed from the line, flocculation can occur. It recommends using the other injection tube that has already been prepared in the other arm.</p>	<p>The penitentiary of the NM Death House. It is provided with all necessary appliances to carry out executions.</p>	<p>The physician shall pronounce the inmate's death. The medical examiner then takes jurisdiction of the body.</p>
NY	<p>There are eight security staff. The department shall identify two legally qualified individuals proficient in starting and administering the IV. Their identity is confidential. Personnel will set up two angiocaths; they will start and regulate the flow of both IV saline solutions, and connect the cardiac monitor that leads to the condemned. Mock drills are conducted twenty-four to forty-eight hours prior to the arrival of the condemned.</p>	<p>Warns "if sodium pentothal has not been flushed from the line, mixture with the pavulon may create flocculation." The commissioner checks for a stay before the execution is carried out.</p>	<p>The Green Haven Correctional Facility has an injection team room, and execution chamber.</p>	<p>A physician is to revive the inmate or pronounce him/her dead.</p>
NC	<p>Correctional officers.</p>	<p>No mention of the procedure for a possible call for a stay of execution.</p>	<p>Central Prison, Raleigh, in the chamber.</p>	<p>The warden pronounces the inmate dead and a physician certifies that death has occurred.</p>

State	Number and Qualifications of Executioners	Problem Prevention or Procedure	Location of the Execution	Involvement of Medical Personnel
OH	A team consisting of no less than twelve members, designated by the warden of the Southern Ohio Correctional Facility (SOCF). Their duties include preparation and testing of equipment and carrying out pre- and post-execution activities. The execution team will drill and rehearse. A technician, who is a DRC employee, will place the IV into the heparin lock, which is similar to a shunt, one on each side.	Fifteen minutes before the execution, phone communication will be established with the governor's office. If there has been no stay, the contact will be maintained until the execution has been carried out.	Southern Ohio Correctional Facility (SOCF).	Such number of physicians of the institution and medical personnel as the warden or acting warden thinks necessary. Designated personnel will examine the body and pronounce the prisoner dead.
OK	Three executioners each administer a different drug.	No mention of a procedure for a possible call for a stay of execution.	OK State Penitentiary.	No information is provided in the protocol. <i>The warden must invite the presence of a physician. ***</i>

OR	An assistant superintendent, superintendent, security, special security team leader. Medically-trained individuals are responsible for the insertion of catheters, they connect a heart monitor to the inmate to determine when death has occurred. An assistant superintendent will choose (two) six-person security teams, primary and back-up, and conduct drills with them.	Emergency telephone lines are set-up for any last minute stays.	OR State Penitentiary, Salem, in the 73.5 sq. ft. execution room.	The superintendent summons a medical professional to certify death.
PA	Individuals technically competent by virtue of training or experience carry out the lethal injection procedure.	Emergency telephone lines are set-up for any last minute stays.	Located on the grounds of SCI Rockview, in a former field hospital.	No information is provided in the protocol. <i>Death is pronounced by a coroner. The coroner shall issue the death certificate.***</i>
SC	No information is provided in the protocol.	No information is provided in the protocol.	Capital Punishment Facility (CPF) located in the Broad River Correctional Institution (BRCI).	No information is provided in the protocol. <i>The executioner and the attending physician shall certify the fact of such execution to the clerk of the court of general sessions in which such sentence was pronounced.***</i>

State	Number and Qualifications of Executioners	Problem Prevention or Procedure	Location of the Execution	Involvement of Medical Personnel
SD	No information is provided in the protocol.	No information is provided in the protocol.	State Penitentiary, Sioux Falls.	The warden shall arrange for the attendance of the prison physician and two other licensed physicians. The physicians are required to conduct a post-mortem exam and report.
TN	Those mentioned are the executioner, the IV team and the extraction team.	One hour before the execution, the administrative assistant will check the phones in the execution chamber presumably to insure that if there is a last minute stay that the call can come through. The protocol also specifies that if death does not occur after the first administration of the drugs that a second administration should be given.	The execution chamber is located in Building 8. The protocol information does not specify the complex where Building 8 is located.	Medical doctor and associate are mentioned early on in the protocol. A physician is mentioned later in the protocol as the one who confirms death, but the duties of the doctor and associate are not discussed.

TX	A medically-trained individual, whose identity is kept confidential, shall insert an intravenous catheter and cause the saline to flow.	No mention of the procedure for a possible call for a stay of execution.	Huntsville, in an execution chamber.	A medically-trained individual, whose identity is kept confidential, shall insert an intravenous catheter and cause the saline to flow.
UT	The person(s) administering the injection must be able to give an IV.	An independent reviewer said that UT gives more chemicals than necessary. The director of PR, although not sure, believes they use double what is used in other states.	No information was provided in the communication.	No information was provided in the communication.
VA	The director gives the order to carry out the sentence of the court.	No information is provided in the protocol.	Greensville Correctional Center in Jarratt, contains a witness room and execution chamber.	No information was provided in the protocol. <i>A physician employed by the department or his assistant shall be present. ***</i>

State	Number and Qualifications of Executioners	Problem Prevention or Procedure	Location of the Execution	Involvement of Medical Personnel
WA	The superintendent conducts briefings and rehearsals to adequately prepare for the execution. No individual will be required to take part in an execution. The Escort Team places the inmate on a table and secures the inmate to the table. An injection team inspects the area, assembles necessary materials, starts the normal flow of saline, and, following word from superintendent, introduces lethal solutions. The injection team leader alerts the superintendent when all solutions have been administered.	The condemned's file is examined to see if any special instructions may be required. There is no mention of a procedure for a possible call for a stay of execution.	Washington State Penitentiary.	A physician pronounces death.
WY	No information was provided in the communication.	No information was provided in the communication.	They don't have a room. They don't have many executions. However, executions can be performed in any WY prison.	Two Physicians are present. One is the prison physician.

* All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The sources for the protocols and communications can be found in *infra* app. 1, tbl. 20, app. 3. Much of the wording in this table is taken verbatim from the protocols.

** This table relies on two sources: (1) all lethal injection protocols and (2) all state statutes specifying the involvement of medical personnel in executions. For twenty-seven states, lethal injection protocols overlapped substantively with the statute. See ARIZ. REV. STAT. ANN. § 13-705 (West 2000); ARK. CODE ANN. § 16-90-502 (Michie 1999); 2001 Cal. Legis. Serv. 129 (West); CONN. GEN. STAT. ANN. § 54-100 (West Supp. 2001); DEL. CODE ANN. tit. 11, § 4209 (2000); FLA. STAT. ANN. § 922.11 (West 2000); GA. CODE ANN. § 17-10-41 (2000); IDAHO

CODE § 19-2716 (Michie 2000); 725 ILL. COMP. STAT. ANN. 5/119-5 (West 2001); IND. CODE ANN. § 35-38-6-1 (West 2001); KAN. STAT. ANN. § 22-4001 (2000); LA. REV. STAT. ANN. § 569 (West 2001); MD. CODE ANN., WITNESSES § 3-907 (2000); MISS. CODE ANN. § 99-19-53 (2000); MO. ANN. STAT. § 546.740 (West Supp. 2001); MONT. CODE ANN. § 46-19-103 (2000); N.M. STAT. ANN. § 31-14-15 (Michie Supp. 2000); N.Y. [persons authorized to be present at execution] § 660 (2001); N.C. GEN. STAT. § 15-190 (2000); OHIO REV. CODE ANN. § 2949.25 (West 2001); OR. REV. STAT. § 137.463; S.D. CODIFIED LAWS § 34-25-18 (Michie 2001); TENN. CODE ANN. § 40-23-116 (Supp. 2000); TEX. CRIM. PROC. CODE ANN. § 43.14 (Vernon 1999); UTAH CODE ANN. § 77-19-11 (2001); WASH. REV. CODE ANN. § 10.95.185 (West 2001); WYO. STAT. ANN. § 7-13-908 (Michie 2001). For nine states, the statutes provided some additional information. *See* COLO. REV. STAT. § 16-11-404 (2000); KY. REV. STAT. ANN. § 431.220 (Michie 2000); 2001 Nev. Stat. 176.355, N.H. REV. STAT. ANN. § 630:5 (2000); N.J. STAT. ANN. § 2C:49-2 (West 2001); OKLA. STAT. ANN. tit. 22, § 1015 (West 2001); 61 PA. CONS. STAT. ANN. § 3004 (West 2000); 24 S.C. CODE ANN. REGS. 24-3-560 (2000); VA. CODE ANN. § 53.1-234 (Michie 2000).

*** Italics refer to information that was taken from state statutes rather than directly from the state protocols.

TABLE 18*
NUMBERS AND TYPES OF WITNESSES SPECIFIED IN THE LETHAL INJECTION PROTOCOLS OR COMMUNICATIONS OF
36 STATES

State	General Witnesses	Media Witnesses	Specification of What and When Media Can View
AZ	No information was provided in the protocol.	No information was provided in the protocol.	No information was provided in the protocol.
AR	Six to twelve people chosen by Director of the DOC. Requirements: twenty-one years of age, no ex-felons, mature and responsible state citizens.	No information was provided in the protocol.	No information was provided in the protocol.
CA	Up to fifty people may witness. Specified: warden, attorney general, twelve reputable citizens, two physicians, and, if requested, up to five of the inmate's family or friends, and two spiritual advisors.	Seventeen news media representatives, nine state selected witnesses, four staff escorts.	No information was provided in the protocol.

CO	A select group usually includes the victim's family, the prosecuting and defense attorneys, an official from the investigating law enforcement agency, and approved media representatives.	Approved media representatives.	<p>Twenty minutes prior to the scheduled execution time or when instructed by the Warden, the IV team will insert two intravenous catheters into appropriate veins in the inmate's arms, one to deliver the lethal agents and the other to serve as a back-up in the event of injection failure into the primary catheter. Approximately eight minutes before the execution, the witnesses are escorted into the witness room. Immediately after the execution and pronouncement of death, the witness room curtain will be closed and the witnesses escorted from the viewing area to the lobby where they will sign the Record of Execution Book.</p>
CT	The warden, a number of execution personnel deemed by the warden as necessary, and the following people may be present: the commissioner, a physician, a clergyman at the request of inmate, no more than three adults designated by the inmate, and other persons deemed appropriate by the commissioner.	<p>Nine news media. The commissioner may decrease or increase for specified reasons of space and security. There shall be a committee on news media access to executions composed of news media representatives appointed by the Associated Press Managing Editors Association of Connecticut and the Connecticut Associated Press Broadcasters Association. The committee shall decide which representatives to send. (See protocol for extensive details.)</p>	<p>The heart monitor will be connected to the inmate. A primary intravenous infusion line shall be inserted in the left arm with a line inserted in the right arm as an alternative. A staff member shall make a final inspection of the intravenous infusion system to determine all is in order. After that, the witness room window coverings will be opened to allow viewing of the inmate. Once the executioner's inform the warden when the infusion of the lethal substance has been completed, the warden directs a staff member to close the window and summon a physician to pronounce death.</p>

TABLE 18, CONT.

State	General Witnesses	Media Witnesses	Specification of What and When Media Can View
DE	Ten official witnesses who may include: arresting officers, federal officers, police chiefs or a designee, a representative from the Victims Rights Bureau, and criminal justice professionals.	May be invited depending on security issues and space constraints.	No information was provided in the protocol.
FL	The warden, the physician's assistant with the DOC, Secretary of the DOC.	No information was provided in the protocol.	No information was provided in the protocol.
GA	The warden, [two assistants or more as directed by the warden, two staff physicians,]; one contract physician as designated by Health Services; an IV Team with two Emergency Medical Team (EMT) members; six correctional officers to serve as a special escort team; three volunteers (staff members); one Chaplain; Security personnel as appropriate. Individuals who MAY BE PRESENT: five witnesses chosen by the condemned; the Commissioner may approve five witnesses and include officials with the Executive, Judicial or Legislative Branch of Government or private Citizens. One witness may be present representing the victim.	Six chosen from among GA Bureau Chief of the United Press International Wire Service; GA Bureau Chief of the Associated Press Wire Services; GA Press Association; GA Association of Broadcasters.	The IV team will place intravenous ports into the veins of both arms of the condemned. The heart monitor leads will be applied to the condemned. If the veins are such that an IV cannot be started, a contract physician will perform the cut down procedure to establish an intravenous port. Witness room curtains will be opened. The execution is carried out. The witnesses are not escorted out nor are the window curtains closed until death has been announced.

ID	Does mention witnesses in the protocol but does not define who they are and how many are authorized.	No information was provided in the protocol.	No information was provided in the protocol.
IL	Does mention witnesses in the protocol but does not define who they are and how many are authorized.	No information was provided in the protocol.	No information was provided in the protocol.
IN	Mentions witnesses but only specifies two staff members in the room during the process; the offender is allowed up to ten individuals.	No information was provided in the protocol.	No information was provided in the protocol.
KS	No information because a protocol does not exist.	No information because a protocol does not exist.	No information was provided in the protocol.
KY	No information because a protocol does not exist.	No information because a protocol does not exist.	No information was provided in the protocol.
LA	Warden, coroner of West Feliciana Parish or deputy. The warden chooses a physician and a competent person to administer the lethal injection. A Priest, minister or religious advisor if requested by the inmate. Not less than five, or more than seven, other witnesses are required by law to be present. Victim relationship witnesses are authorized to attend the execution; such witnesses may be limited to two.	Of the number of reporters, between five and seven, three will be news media who agree to act as pool reporters. **	The witnesses are brought into the witness room. The inmate is brought into the execution room. Once properly secured to the table, the curtain to the witness room is closed. The IV is put in. The curtain is re-opened and the execution continues.

TABLE 18, CONT.

State	General Witnesses	Media Witnesses	Specification of What and When Media Can View
MD	Must be a citizen of Maryland and at least eighteen years of age; they must also send a letter specifying why they want to witness.	No information was provided in the protocol.	No information was provided in the protocol.
MS	Sheriff or deputy of the county of the inmate's conviction; two physicians; up to two members of the clergy as requested by the offender; two members of the offender's family. Anticipate adding two members of victim's family.	Up to eight credentialed members of the media. Anticipate limiting to the number four.	The condemned offender is escorted from the holding cell and strapped to the gurney. Catheters are placed in each arm and a saline solution is started. Witnesses are then escorted into the observation rooms. After death is confirmed the witnesses are escorted out of the room.
MO	Mentions witnesses but specifies only that the chaplain and psychologist shall be available to counsel witnesses as necessary following the execution.	No information was provided in the protocol.	No information was provided in the protocol.
MT	No more than twelve. The condemned may choose three; the family of the victim may choose three; state witnesses shall be selected by the Department Director to be part of the twelve.	News media allowed to choose three.	No information was provided in the protocol.
NV	Information is confidential.	Information is confidential.	Information is confidential.
NH	No information because a protocol does not exist.	No information because a protocol does not exist.	No information because a protocol does not exist.

TABLE 18, CONT.

State	General Witnesses	Media Witnesses	Specification of What and When Media Can View
NC	Sixteen maximum. This includes prison staff that could mean the warden, or designee. A surgeon or physician, four respectable citizens, two members of the crime victim's family, the district attorney and sheriff of the county of conviction and their choice two witnesses each. The convicted felon can have counsel and any representatives of the felon, a minister or ministers. If the two witnesses per crime victim's family decline, then the district attorney may fill their seats as the district attorney chooses.	Five who will act as pool reporters to brief other reporters. **	The inmate is secured with lined ankle and wrist restraints to a gurney in the preparation room outside the chamber. Cardiac monitor leads and a stethoscope are attached. Two saline intravenous lines are started, one in each arm, and the inmate is covered with a sheet. The inmate is then wheeled into the execution chamber and the curtain is raised.
OH	Three witnesses for the inmate; three witnesses representing the victim; one clergy or spiritual advisor.	Five, three of which are pool reporters. **	The condemned prisoner will be placed on the bed and strapped down. Intravenous injection tubes will then be inserted. Witnesses are then escorted into the death house. Once the execution cycle is completed, the curtains are drawn and the designated personnel will examine the body and pronounce the prisoner dead.

NJ	The Commissioner shall select six adult citizens and two alternates who have volunteered to witness the execution. Two clergy, at the request of the condemned, who are not related to the condemned, are permitted to attend. Anyone who is related by blood or marriage to the sentenced person or to the victim is not authorized to be present at the execution.	Eight media from four categories.	No information was provided in the protocol.
NM	The warden, physician, attorney general of state; at least twelve reputable citizens; two ministers of the gospel named by the condemned; a maximum of five inmate relatives or friends; peace officers chosen by the Warden. Any person currently under supervision of any corrections or judicial system, or any person under eighteen, is denied to witness an execution.	Those media requested by the Warden.	Catheters are placed in each arm before the witnesses are summoned to the death chamber viewing room. They are escorted out after a physician has pronounced death.
NY	Up to fourteen Supreme Court Justice; inmate's attorney; D.A. & Sheriff of the county of conviction; two adult citizens; four friends or relatives chosen by the inmate.	Up to four.	Two angiographs are setup one in each forearm or other useable vein before the witnesses can view the execution. Once the chemicals have been injected the curtain is enclosed. A physician is called to pronounce death. If death is not pronounced, an announcement is made to the witnesses. The physician exits, the curtain is raised and the procedure is repeated. Once the physician pronounces death the curtain is raised and the death is officially pronounced to the witnesses.

OK	The warden, a doctor, DA, trial judge, police chief, sheriff, two clergy; five inmate family members; victim family members who request to attend but the number allowed is up to the warden's discretion.	Twelve media representatives.	No information because a protocol was not provided.
OR	One or more physicians; the attorney general; county sheriff and district attorney; one or more of the victim's relatives; no more than five inmate friends or relatives; no more than two religious representatives. Other people, including peace officers, may be invited at the discretion of the superintendent. Witnesses must be at least age eighteen, pass a security check, and be properly attired.	Five Oregon media representatives chosen from among the Association of Broadcasters, Oregon Newspaper Publishers' Association, and Associated Press to act as pool for other media. **	Following insertion of the intravenous catheters the witnesses are escorted to the witness area.
PA	No information because the protocol was not provided.	No information because a protocol was not provided.	No information because a protocol was not provided.
SC	Three members of the victim's family unless there is more than one victim, then the Corrections' director can limit to one per family; a minister of the gospel; inmate's counsel; chief law enforcement officer or designee; solicitor or assistant solicitor in the county where the offense occurred.	Three representatives: one print, one broadcast, and one from the dominant wire service.	No information because a protocol was not provided.

TABLE 18, CONT.

State	General Witnesses	Media Witnesses	Specification of What and When Media Can View
SD	The warden, attorney general, trial judge, state's attorney, sheriff, and up to ten additional citizens including one media representative. The warden shall arrange for the attendance of the prison physician and two other licensed physicians of the state. At the request of the defendant, the warden must also permit ministers of the gospel, priests or clergymen of denomination chosen by defendant not exceeding two, and any relatives or friends requested by the defendant not exceeding five.	At least one media representative from the ten additional citizens.	The protocol describes the placement of the IV into both arms of the inmate under the Preparation Section. It is assumed the witnesses do not witness this portion of the execution.
TN	Staff authorized in the capital punishment complex are: commissioner or designee, warden, deputy warden, administrative assistant, death watch supervisor and assigned officers, chaplain, medical doctor and associate, executioner, IV team, extraction team. The warden or commissioner must approve any exceptions to the above. Immediate family members of the victim are mentioned but the number is not specified.	Once the sentence has been carried out, the media will be so notified by the designated information officer.	The IV Technicians will insert a catheter into each arm, attach the tubing, and start an IV consisting of saline solution. The IV team will then leave the chamber. Official witnesses will then be secured in the official witness room. Following the completion of the injection process, and a five-minute waiting period, the blinds to the official witness room are closed. While the physician examines the body the curtain remains closed. Whether the inmate is declared to be still alive or dead, the warden will have the curtains raised so that the witnesses can view what will follow.

TX	Up to five requested by the inmate and five for victim family members.	Five media representatives who must agree to act as pool reporters. **	An intravenous catheter shall be inserted into the condemned person's arm and cause a saline solution to flow. The witnesses shall then be escorted into the execution chamber.
UT	Five witnesses of the condemned's choosing; government witnesses will be identified; two officers visiting from another state reviewing the execution procedure may be present; two members of Attorney General's office; up to two prosecuting attorneys; two members of the investigative law enforcement agency; two individual with an expertise of the history of execution policy; up to four members of the victim's family; department employees such as the warden may participate as well.	Was nine but now up to the Executive Director to decide the number.	No information because a protocol was not provided.
VA	Those individuals allowed to participate: a member of the clergy; the victim's family, who view from a separate room adjacent to the death chamber; media witnesses; and citizen witnesses.	Are allowed to participate, but the number is not specified.	The inmate is escorted into the chamber just prior to the appointed hour. The curtains separating the witness room and the execution chamber remain open until the inmate is restrained to the table. Once the inmate is restrained, the curtains are closed and remain closed until the IV lines have been established, normally, one in each arm. When the Director is informed that death has occurred, the curtains are closed and the witnesses are escorted from the Death Chamber.

TABLE 18, CONT.

State	General Witnesses	Media Witnesses	Specification of What and When Media Can View
WA	One representative from the victim's family; one representative from the inmate's family; the superior court judge who signed the death warrant; the inmate's attorney; a county prosecuting attorney.	A maximum of twelve.	No information was provided in the protocol.
WY	The Director of the DOC and anyone deemed necessary to assist him or her; two physicians, which include the prison physician; the inmate's spiritual advisor; the penitentiary chaplain if not the same as one chosen by the inmate; the sheriff of the county where the inmate was convicted; no more than ten relatives or friends requested by the prisoner.	No information was provided in the protocol.	No information was provided in the protocol.

* All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The sources for the protocols and communications can be found in *infra* app. 1, tbl. 20, app. 3. Much of the wording in this table is taken verbatim from the protocols.

** Five states mention a limited number of media witnesses who must agree to act as pool reporters who will report to other media following the witnessing of the execution: Louisiana, North Carolina, Ohio, Oregon, and Texas.

TABLE 19*
A BREAKDOWN OF STATES WITH PUBLIC OR PRIVATE LETHAL
INJECTION PROTOCOLS

I. STATES WITH COMPLETE PUBLIC PROTOCOLS (19 STATES)

Arizona	Arkansas	California	Colorado
Connecticut	Florida	Georgia	Idaho
Illinois	Montana	New Jersey	New Mexico
New York	North Carolina	Oklahoma	Oregon
South Dakota	Texas	Washington	

II. STATES WITH A PARTIALLY PRIVATE PROTOCOL (12 STATES)

These states were contacted by phone or email for at least some necessary information because that information was not available in the state's protocol.

Delaware	Indiana	Kansas
Louisiana	Maryland	Mississippi
Missouri	New Hampshire	Ohio
Tennessee	Utah	Wyoming

III. STATES WITH A PRIVATE PROTOCOL (5 STATES)

These states did not provide any of the requested information or they provided only a portion of the requested information.

Kentucky	Nevada
Pennsylvania	South Carolina
Virginia	

* All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The sources for the protocols and communications can be found in *infra* app. 1, tbl. 20, app. 3.

TABLE 20
ALL SOURCES FOR THE LETHAL INJECTION PROTOCOLS IN 36 STATES

Arizona	Arizona Department of Corrections, Arizona State Prison Complex- Florence, Execution Information, at http://www.adc.state.az.us/florenceHist.htm (last visited June 13, 2001) (containing information regarding lethal injection including the chemicals) (on file with Fordham Law School); see also Susan Leonard, <i>Death's Price: Three Killers Cost \$155,000 to Execute</i> , ARIZ. REPUBLIC, Apr. 18, 1993, at B1.
Arkansas	Telephone Interview with Marcia White, Public Information, Arkansas Department of Correction (June 11, 2001) (confirming no updates to the procedure since publication of the <i>Arkansas Department of Corrections Procedure for Execution</i>).
California	California Department of Corrections, California Execution Procedures: Lethal Injection, at http://www.cdc.state.ca.us/issues/capital/capital4.htm (last visited June 13, 2001) (mentioning the chemicals in the injection and saline and noting some procedural changes) (on file with Fordham Law School).
Colorado	Colorado Department of Corrections, Capital Punishment in Colorado, at http://www.doc.state.co.us/DeathRow/DeathRow.htm (last visited July 31, 2001) (describing the procedure that occurs on execution day and providing a breakdown of execution methods) (on file with Fordham Law School).
Connecticut	STATE OF CONNECTICUT DEPARTMENT OF CORRECTIONS, PUBLIC DEFENDERS OFFICE, ADMINISTRATIVE DIRECTIVE 6.15 at 7-8 (July 23, 1997) (accuracy verified Apr. 15, 2001) (mentioning the chemicals and their quantity). Telephone Interview with Heather Zimba, Public Information Officer, Connecticut Department of Corrections (Mar. 24, 2001) (stating that, as of Apr. 25, 2001, all the chemicals are the same).
Delaware	Telephone Interview with Gail Stallings Minor, Community Relations, Delaware Department of Corrections (Apr. 25, 2001) (providing chemicals only), at http://www.state.de.us/data/deathp_history.html (providing protocol).
Florida	<i>Sims v. State</i> , 754 So.2d 657, 666 n.17 (2000) (describing general execution protocol in the context of one specific execution). Florida Department of Corrections, Execution Day Procedures, at http://www.fcc.state.fl.us/fcc/reports/methods/emcont.html (applying to executions after Jan. 28, 2001).

TABLE 20, CONT.

Georgia	GA. DEP'T OF CORR., LEGAL OFFICE, ADMINISTRATIVE AND EXECUTION PROCEDURES: DEATH SENTENCE: LETHAL INJECTION at 25–26 (May 1, 2000), <i>available at</i> http://www.dcor.state.ga.us/research_reports/html/deathPenalty.html (providing description of chemicals and procedure in which they are administered).
Idaho	IDAHO DEP'T OF CORR., POLICY AND PROCEDURE MANUAL: EXECUTION PROCEDURES § 135 at 4 (Jan. 1994) (listing the chemicals in the injection and mandating that injection shall be through intravenous catheter).
Illinois	Telephone Interview with Nick Howell, Public Information Officer, Illinois Department of Corrections (Apr. 9, 2001) (listing the execution drugs). Facsimile from Nick Howell, Public Information Officer, Illinois Department of Corrections to Daniel Auld, Research Assistant, Fordham Law School (containing the drugs in the lethal injection and listing the execution procedure).
Indiana	Telephone Interview with Pam Pattison, Public Information Officer, Indiana Department of Corrections (March 26, 2001) (providing information including lists of the chemicals and saline). Facsimile from Pam Pattison, Public Information Officer, Indiana Department of Corrections to Daniel Auld, Research Assistant, Fordham Law School (Aug. 7, 1997) (providing Criminal Law and Procedure Code 35-38-6-4, Indiana Criminal and Vehicle Handbook 35-38-6-5, Department of Correction Information Statement referring to the execution of Tommie Smith (July 18, 1996), and letter listing chemicals used and procedure steps). Letter from Barry Nothstine, Public Information Officer, Indiana State Prison to Daniel Auld, Research Assistant, Fordham Law School (July 18, 1996) (containing written chronology of the events of the execution of Tommie Smith).
Kansas	Telephone Interview with Bill Miskell, Public Information Officer, Kansas Department of Corrections (June 19, 2001) (explaining that specific protocols are not yet in policy because no inmates are nearing execution).
Kentucky	Ky. Rev. Stat. Ann. § 431.220 (Michie 1998), <i>available at</i> http://162.114.4.13/krs/431-00/chapter.htm (last visited June 13, 2001) (on file with Fordham Law School) (providing information on execution of the death penalty). Telephone Interview with Brenda Priestly, General Counsel's Office (Mar. 14, 2001) (stating that they don't have a policy).

TABLE 20, CONT.

Louisiana	Telephone Interview with Cathy Fontenot, Director of Classification, Warden's Office, Louisiana Department of Public Safety and Corrections (Apr. 24, 2001) (providing chemicals only). Facsimile from Melissa Cook, Information Services Attorney, Louisiana Department of Public Safety and Corrections to Daniel Auld, Research Assistant, Fordham Law School (providing execution protocol) (Apr. 4, 2001). Telephone Interview with Stephanie Lamartiniere, Warden's Executive Services Assistant (August 22, 2001) (stating that there are 16 inmates on death row who were put there before the statute change of September 1991, which specifies that these people would be executed by electrocution, and confirming that they will all be executed by lethal injection because Louisiana no longer executes by electrocution). Telephone Interview with Cathy Fontenot, Director of Classification, Louisiana State Penitentiary (Aug. 22, 2001) (noting that after Louisiana's 1991 switch to lethal injection, all death warrants issued by judges have specified execution by lethal injection irrespective of the wording of the Louisiana state statute).
Maryland	Maryland Department of Public Safety and Correctional Services, Division of Correction, at http://www.dpscs.state.md.us/doc/witnesses.htm (last visited July 31, 2001) (on file with Fordham Law School) (providing information regarding execution witnesses, policy, and procedure); E-mail from Priscilla Doggett, Public Information Officer, Maryland Department of Corrections, to Daniel Auld, Research Assistant, Fordham Law School (July 20, 2001) (confirming chemicals used in lethal injection).
Mississippi	E-mail from Jennifer Griffin, Communications Director, Mississippi Department of Corrections, to Daniel Auld, Research Assistant, Fordham Law School (July 5, 2001) (providing chemicals used, witnesses allowed, and description of the execution process).
Missouri	Telephone Interview with John Fougere, Public Information Officer, Missouri Department of Correction (May 14, 2001) (providing chemicals only); Letter from Tim Kniest, Public Information Officer, Missouri Department of Corrections to Daniel Auld, Research Assistant, Fordham Law School (Sept. 9, 1997) (providing Missouri Department of Corrections Capital Punishment Procedures, seventeenth revision from July 19, 1995).
Montana	Letter from Mike Cronin, Public and Victim Information Specialist, Montana Department of Corrections, to Robert Cowie, Research Assistant, Fordham Law School (Jan. 5, 2000) (on file with Fordham Law School) (mentioning the chemicals' names and quantities and use of saline). E-mail from Ellen Bush, Public Information Office, Montana Department of Corrections, to Daniel Auld, Research Assistant, Fordham Law School (providing changes to the policy including mention of the lethal injection); <i>see also</i> MONT. DEP'T OF CORR., POLICIES AND PROCEDURES § 3.6.1 (Jan. 1, 1998) (revised June 15, 2000).

TABLE 20, CONT.

Nevada	Nevada Department of Corrections, Nevada Department of Prisons: Organization: Death Penalty, at http://prisons.state.nv.us/prison%20organization.htm (last visited June 13, 2001) (on file with Fordham Law School) (stating that the lawful method of execution is by means of lethal injection). Letter from Glen Whorton, Chief of Classification and Planning, Nevada Department of Prisons, to Daniel Auld, Research Assistant, Fordham Law School (Aug. 29, 1997) (stating that they cannot disclose any information concerning their protocol for lethal injection).
New Hampshire	Telephone Interview with Jeff Lyons, Public Information Officer, New Hampshire Department of Corrections (June 20, 2001) (stating that there is no procedure due to lack of necessity, but mentioning that there is policy in drafting stages that will probably resemble that of other states).
New Jersey	NEW JERSEY OFFICE OF HEALTH SERVS., DEATH BY LETHAL INJECTION 10, (Supp. 1118-96 (n.d.)) (citing the passage of Legislative Bill No. 1851 as providing the legal basis to establish execution by lethal injection); <i>id</i> at 10A: 23-1.1 to 2.21 (chapter 23, lethal injection). The document entitled Death By Lethal Injection was provided by the Office of the Health Services and The State Prison, Trenton. Timothy Ireland, <i>Death Machine Target of Criticism</i> , THE COURIER-POST, Oct. 21, 1990, at 1A. Michael de Courcy Hinds, <i>Making Execution Humane (or Can It Be)</i> , N.Y. TIMES, Oct. 13, 1990, at 1. Telephone Interview with Kim [reluctant to reveal last name], Public Information Office, New Jersey Office of Health Services (Aug. 15, 2001) (confirming that the syringes used in the injection are 800 cc, not 80, but the policy is being updated so some information will change).
New Mexico	Facsimile communication from Gerges Scott, Public Information Officer, New Mexico Department of Corrections, to Daniel Auld, Research Assistant, Fordham Law School (May 30, 2001) (on file with Fordham Law School) (providing execution policy from Penitentiary of New Mexico); <i>see also</i> Telephone Interview with John Shanks, Deputy Secretary for Operations with the New Mexico Department of Corrections (Aug. 3, 2001) (explaining that there are no inmates on New Mexico's death row who were there before 1979, when the lethal injection statute was enacted).
New York	NEW YORK STATE DEP'T OF CORRECTIONS, PROCEDURES FOR THE OPERATION OF THE CAPITAL PUNISHMENT UNIT GREEN HAVEN CORRECTIONAL FACILITY § V pts. A-C at 7 (describing the procedure for the lethal injection and mentioning the chemicals and the use of saline). Letter from Linda Rocclia, Public Information Office, New York State Department of Corrections, to Daniel Auld, Research Assistant, Fordham Law School (Apr. 18, 2001) (including detailed information about the lethal injection).

TABLE 20, CONT.

North Carolina	North Carolina Department of Corrections Website, Execution Methods, Lethal Injection <i>at</i> http://www.doc.state.nc.us/dop/deathpenalty/executio.htm (last visited June 13, 2001) (on file with Fordham Law School) (mentioning the name and quantity of each chemical and noting saline). Telephone Interview with Pam Walker, Public Information Office, North Carolina Department of Corrections (Aug. 15, 2001) (confirming that term "each" listed with each chemical in injection posted on internet refers to vials and that quantity of pavulon is 12 vials of 5 ml).
Ohio	Telephone Interview with Joe Andrews, Communications Chief, Ohio Department of Rehabilitation and Correction (June 20, 2001) (providing information regarding chemicals and witnesses). Telephone Interview with JoEllen Culp, Public Affairs Liaison, Ohio Department of Rehabilitation and Correction (providing information concerning policy issued in compliance with Ohio Revised Code sections 5120.01 through .09 (effective Apr. 12, 2001)).
Oklahoma	Oklahoma Department of Corrections, Capital Punishment: Execution Process <i>at</i> http://204.62.19.52/DOCS/CapitalP.htm (last visited June 13, 2001) (on file with Fordham Law School) (listing the chemicals in the injection and mentioning saline). Telephone Interview with Lee Mann, Assistant to the Warden, Public Information Office, Oklahoma Department of Corrections (providing information concerning witnesses).
Oregon	Oregon Department of Corrections, Interesting Info: Miscellaneous Capital Punishment Facts <i>at</i> http://www.doc.state.or.us/publicaffairs/cap_punishment/deathrst.shtml (last visited June 13, 2001) (on file with Fordham Law School) (mentioning the chemicals used in the injection).
Pennsylvania	PENAL & CORRECTIONAL INST. OF THE COMMONWEALTH OF PA., METHOD OF EXECUTION, PENNSYLVANIA § 2121.1 (n.d.) (mentioning the use of lethal injection without specifying the chemicals to be used) <i>available at</i> http://www.dpccs.state.md.us/doc/witnesses.htm . Telephone Interview with Susan McNaughton, Press Office, Penal & Correctional Institution of the Commonwealth of Pennsylvania (Aug. 20, 2001) (stating that aside from what is on the internet, the protocol policy is confidential).
South Carolina	South Carolina Department of Corrections, Capital Punishment, <i>at</i> http://www.state.sc.us/scdc/capitalpunishment/capitalpunishment.htm (last visited July 31, 2001) (providing information regarding facility, witnesses, and procedure).

TABLE 20, CONT.

South Dakota	Place and Manner of Execution – Qualifications to Perform – Exemptions, S.D. Codified Laws § 23A-27A-32 (Michie 2001) (mentioning the use of lethal injection without specifying the chemicals to be used). Telephone Interview with Michael Winder, Policy and Information Specialist, South Dakota Department of Corrections (Aug. 20, 2001) (stating that there have been statute changes, but no updates regarding the lethal injection components, providing execution guidelines containing information on last meal, chemicals in injection and other execution information, and stating that they do not have a formal policy right now, they may edit guidelines at any time, and they have not executed anyone in 50 years and have never used lethal injection).
Tennessee	Telephone Interview with Steve Hayes, Public Information Officer, Tennessee Department of Correction (May 14, 2001) (providing information about the chemicals in the lethal injection). Facsimile sent to Daniel Auld, Research Assistant, Fordham Law School (Aug. 22, 2001) (describing day of execution and listing quantities of chemicals in lethal injection).
Texas	TEX. DEP'T OF CRIMINAL JUSTICE INSTITUTIONAL DIV., PUB. INFO. OFFICE, EXECUTION PROCEDURES OF INMATES SENTENCED TO DEATH at 2 (Aug. 19, 1997) (verified Apr. 23, 2001) (listing the chemicals used in the injection). Facsimile sent from Texas Department of Criminal Justice to Daniel Auld, Research Assistant, Fordham Law School (Aug. 19, 1997) (including Code of Criminal Procedure Art. 43.14-125); <i>see also</i> http://www.tdcj.state.tx.us/statistics/stats-home.htm .
Utah	Utah Department of Corrections, Frequently Asked Questions at http://www.udc.state.ut.us/community/faq/index.html (last visited July 31, 2001) (providing methods of execution).
Virginia	Letter from Larry Traylor, Director of Communications, Virginia Department of Corrections, to Daniel Auld, Research Assistant, Fordham Law School (June 20, 2001) (on file with Fordham Law School) (describing protocol for electrocution and lethal injection).
Washington	Telephone Interview with Laurie Scammerhorn, Division of Prisons Field Instruction, Washington Department of Corrections (Apr. 25, 2001) (confirming mention of chemicals and their quantity in the DEPARTMENT OF CORRECTIONS DIVISION OF PRISONS FIELD INSTRUCTION No. WSP410.500). CAPITAL PUNISHMENT CASE STATUS REPORT FROM THE CAPITAL LITIGATION TEAM AND CHRISTINE O. GREGIORE, ATTORNEY GENERAL OF THE STATE OF WASHINGTON (Apr. 15, 1997). CAPITAL PUNISHMENT/ISDP INMATES FIELD INSTRUCTION, No. WSP410.500 FROM DIVISION OF PRISONS (issued Dec. 8, 1993) (effective Jan. 8, 1994). WASHINGTON DEPARTMENT OF CORRECTIONS, DEPARTMENT OF CORRECTIONS POLICY, CAPITAL PUNISHMENT, No. 490.200 (effective Sept. 3, 1993) & 760.001 at http://www.wa.gov/doc/Content/faq/cp_policy.htm .
Wyoming	Telephone Interview with Melinda Brazzale, Wyoming Department of Corrections (June 20, 2001) (providing chemicals and information regarding witnesses and execution rooms).

APPENDIX 2.
STATE TRENDS IN EXECUTION METHODS:
1800–2001¹

ALABAMA (AL)

1836–1922:	hanging ²
1923–present:	electrocution ³

ALASKA (AK)

1913–1956:	hanging ⁴
1957–present:	no death penalty ⁵

ARIZONA (AZ)

1901–1915:	hanging ⁶
1916–1917:	no death penalty (except for treason and train robbery) ⁷
1918–1932:	hanging ⁸
1933–1991:	lethal gas ⁹
1992–present:	lethal injection (unless the condemned inmate sentenced before the effective date of the Act

¹ An elaboration of the history of the statutory and case law documentation for each state can be found in Denno, *Getting to Death*, *supra* note 1, at 439–64.

² 1836 Ala. Acts p. 107 § 36 (hanging).

³ 1923 Ala. Acts 587 § 1; ALA. CODE § 5309 (1923) (electrocution); ALA. CODE § 15-18-82(a) (1975) (electrocution). The Court has denied certiorari to review the Supreme Court of Alabama's finding that electrocution was constitutional. *See Tarver v. Alabama*, 120 S. Ct. 1669 (2000). On February 13, 2001, the House Judiciary Committee endorsed a bill sponsored by State Rep. Marcel Black, D-Tusculumbia, providing that lethal injection become the primary method of execution, unless the defendant affirmatively chooses electrocution. *See* H.B. 121, 2001 Leg., Reg. Sess. (Al. 2001); *see also* S.B. 52, 2001 Leg., Reg. Sess. (Al. 2001); S.B. 229, 2001 Leg., Reg. Sess. (Al. 2001) (lacking provision by which inmate may choose electrocution). It appears that the bill died in the Senate Judiciary Committee.

⁴ 1913 Alaska Terr. Sess. Laws 20 § 2308 (hanging).

⁵ 1957 Alaska Terr. Sess. Laws 132 § 1 (death penalty abolished).

⁶ ARIZ. TERR. REV. STAT. 2 § 1035 (1901) (hanging).

⁷ 1917 Ariz. Sess. Laws p. 4 § 1 (Amendments and Initiative Measures) (Initiative Act 1916, amending 1913 ARIZ. PENAL CODE § 173) (abolishing death penalty for first degree murder); *see also Ex parte Faltin*, 254 P. 477, 477–80 (Ariz. 1927) (explaining that Initiative Act 1916 abolished the death penalty for first degree murder only, but not for treason and train robbery).

⁸ 1919 Ariz. Sess. Laws p. 20 § 10 (Amendments and Initiative Measures) (Initiative Act 1918, amending 1913 ARIZ. PENAL CODE § 173) (death penalty reinstated; hanging).

⁹ ARIZ. CONST. art. XXII, § 22 (1933) (lethal gas).

chooses lethal gas)¹⁰

ARKANSAS (AR)

1894–1912:	hanging ¹¹
1913–1982:	electrocution ¹²
1983–present:	lethal injection (electrocution for condemned inmates sentenced before the effective date of the Act unless they choose lethal injection) ¹³

CALIFORNIA (CA)

1872–1936:	hanging ¹⁴
1937–1991:	lethal gas ¹⁵
1972–1991:	mandatory death penalty judicially abolished ¹⁶
1992–1996:	lethal gas, unless the condemned inmate chooses lethal injection ¹⁷
1996–present:	lethal injection, unless the

¹⁰ ARIZ. CONST. art. XXII, § 22 (1933) (amended 1992) (lethal injection or lethal gas at the condemned's election if the condemned was sentenced to death for an offense committed prior to the Act's effective date; lethal injection if the pre-enactment condemned fails to choose a method); ARIZ. REV. STAT. ANN. § 13-704 (A)–(B) (West 1978) (amended 1993) (same). A defendant who is sentenced to death for an offense committed before November 23, 1992, shall choose either lethal gas or lethal injection. ARIZ. REV. STAT. ANN. § 13-704(B). Currently in Arizona, there are only 58 inmates remaining who can choose between lethal gas or lethal injection; see www.adc.state.az.us.

¹¹ 1894 Ark. Acts 49 § 2304 (hanging).

¹² 1913 Ark. Acts 55 § 2 (electrocution). The 1913 law switching to electrocution did not expressly indicate retroactive operation.

¹³ ARK. CODE ANN. § 5-4-617(a)(1) (Michie 1983) (electrocution, or lethal injection at the condemned's election, if the condemned was sentenced to death prior to the Act's effective date; electrocution if the pre-enactment condemned fails to choose a method). This Act does not alter the execution of a death sentence imposed for crimes committed before July 4, 1983, except as provided by 1983 Ark. Acts 774 § 3 (providing that any defendant sentenced to death by electrocution before July 4, 1983, can choose lethal injection). 1983 Ark. Acts 74 § 2. Currently in Arkansas, there are only two inmates remaining who can choose between electrocution or lethal injection; see www.accessarkansas.org/doc.

¹⁴ CAL. PENAL CODE 2 § 1228 (1872) (hanging).

¹⁵ 1937 Cal. Stat. 172 § 1 (lethal gas).

¹⁶ *People v. Anderson*, 493 P.2d 880, 899 (Cal. 1992) (declaring the state's death penalty unconstitutional under the state prohibition against cruel and unusual punishment).

¹⁷ 1992 Cal. Stat. 558 § 2 (lethal gas or lethal injection at the condemned's election; lethal gas if the condemned fails to choose a method); CAL. PENAL CODE § 3604(a)–(c) (West 1941) (amended 1992).

condemned inmate chooses lethal gas¹⁸

COLORADO (CO)

1868–1896:	hanging ¹⁹
1897–1900:	no death penalty ²⁰
1901–1932:	hanging ²¹
1933–1987:	lethal gas ²²
1988–present:	lethal injection ²³

CONNECTICUT (CT)

1875–1934:	hanging ²⁴
1935–1994:	electrocution ²⁵
1995–present:	lethal injection ²⁶

DELAWARE (DE)

1829–1957:	hanging ²⁷
1958–1960:	no death penalty ²⁸
1961–1985:	hanging ²⁹

¹⁸ CAL PENAL CODE § 3604 (a)–(b) (West 1941) (amended 1996) (lethal gas or lethal injection at the condemned's election; lethal injection if the condemned fails to choose a method); *see also* LaGrand v. Stewart, 173 F.3d 1144 (9th Cir. 1999) (upholding a condemned's affirmative choice of lethal gas as a method of execution).

¹⁹ COLO. REV. STAT. 22 § 183 (1868) (hanging); *see also* Garvey v. People, 6 Colo. 559, 560 (1883) (noting that prior to 1870, Colorado had instituted death by hanging).

²⁰ 1897 Colo. Sess. Laws 35 § 1 (death penalty abolished). This law was not retroactive. *Id.* § 2.

²¹ 1901 Colo. Sess. Laws 64 § 3 (death penalty reinstated; hanging).

²² 1933 Colo. Sess. Laws 61 § 1 (lethal gas). The 1933 law was not applied retroactively, even for those who committed their offense prior to the new law but who were convicted and sentenced later. *See id.*

²³ COLO. REV. STAT. ANN. § 16-11-401 (West 1988) (amended 1993) (lethal injection). Colorado administers lethal injection “regardless of the date of the commission of the offense or offenses for which the death penalty is imposed.” *Id.*

²⁴ CONN. GEN. STAT. 13 § 19 (1875) (hanging).

²⁵ 1935 Conn. Pub. Acts 266 § 2 (electrocution); CONN. GEN. STAT. 335 § 1727c (1935). The 1935 law did not expressly indicate retroactive operation.

²⁶ CONN. GEN. STAT. ANN. § 54-100(a) (West 1963) (amended 1995) (lethal injection).

²⁷ DEL. CODE p. 143 § 4 (1829) (hanging).

²⁸ 51 Del. Laws 347 § 1 (1958) (death penalty abolished).

²⁹ 53 Del. Laws 309 § 2 (1961) (death penalty reinstated; hanging).

1986–present	lethal injection (hanging unless the condemned inmate sentenced before the effective date of the Act chooses lethal injection) ³⁰
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FLORIDA (FL)

1868–1922:	hanging ³¹
1923–1999:	electrocution ³²
2000–present:	lethal injection unless the condemned chooses electrocution ³³

GEORGIA (GA)

1845–1923:	hanging ³⁴
1924–1999:	electrocution ³⁵
2000–present:	lethal injection ³⁶

³⁰ 65 Del. Laws 281 § 1 (1986) (lethal injection); 65 Del. Laws 281 § 3 (1986) (hanging, or lethal injection at the condemned's election, if the condemned's offense was committed prior to the Act's effective date; hanging if the pre-enactment condemned fails to choose a method); DEL. CODE ANN. tit. 11, § 4209(f) (1953) (amended 1986) (current 2001). The Act's effective date was June 13, 1986. 65 Del. Laws 281 § 3 (1986). Currently, only one Delaware inmate remains who can choose between hanging and lethal injection—James W. Riley; *see* Telephone Interview with Steve Dargitz, Attorney for James Riley, Wilmington, Del. (Aug. 1, 2001). Riley is currently appealing his death sentence before the Third Circuit. *See id.*; *see also* http://www.state.de.us/correc/Data/DeathP_History.htm (March 19, 2001) (“Only one inmate (Riley) has the option of selecting his mode of execution. If no method is selected, the Department of Correction imposes hanging. The other 15 inmates have been sentenced to be executed by lethal injection.”).

³¹ 1868 Fla. Laws ch. 1637 § 27 (hanging).

³² 1923 Fla. Laws ch. 9169 § 2 (electrocution); FLA. STAT. ch. 922.10 (1992) (amended 1994). The 1923 law did not expressly indicate retroactive operation.

³³ FLA. STAT. ANN. § 922.105(1) (West 1998) (amended 2000) (providing for execution by lethal injection unless the condemned affirmatively chooses electrocution). This statute can be retroactively applied. *See* *Bryan v. State*, 753 So.2d 1244, 1254–55 (Fla. 2000); *see also* H.B. 951, 103d Leg., Reg. Sess. (Fl. 2001) (authorizing retroactive changes in method of execution); S.B. 124, 103d Leg., Reg. Sess. (Fl. 2001) (allowing any method of execution not prohibited by the Federal Constitution and authorizing a retroactive application of a change in any method of execution).

³⁴ GA. CODE p. 794 § 85 (1845) (hanging).

³⁵ 1924 Ga. Laws 475 § 1 (electrocution); GA. CODE ANN. § 17-10-38(a) (1985).

³⁶ GA. CODE ANN. § 17-10-38(a) (1985) (amended 2000) (lethal injection). Condemned individuals sentenced to death for capital crimes committed on or after May 1, 2000, shall be executed by lethal injection, and condemned individuals sentenced to death for crimes committed prior to the effective date of the Act shall be executed by electrocution. 2000 Ga. Laws 947 § 1. *But see* *Dawson v. State*, 554 S.E.2d 137 (Oct. 5, 2001) (holding that death by electrocution

HAWAII (HI)

1925–1955:	hanging ³⁷
1956–present:	no death penalty ³⁸

IDAHO (ID)

1864–1977:	hanging ³⁹
1978–1981:	lethal injection ⁴⁰
1982–present:	lethal injection at the election of the director of the department of corrections; firing squad if injection is “impractical” ⁴¹

ILLINOIS (IL)

1839–1926:	hanging ⁴²
1927–1982:	electrocution ⁴³
1983–present:	lethal injection ⁴⁴

INDIANA (IN)

1889–1912:	hanging ⁴⁵
1913–1994:	electrocution ⁴⁶
1995–present:	lethal injection ⁴⁷

IOWA (IA)

1878–1964:	hanging ⁴⁸
1965–present:	no death penalty ⁴⁹

violated the State constitution’s prohibition against cruel and unusual punishment).

³⁷ HAW. TERR. REV. STAT. 229 § 4095 (1925) (hanging).

³⁸ 1956 Haw. Terr. Sess. Laws 282 §§ 1-14 (death penalty abolished).

³⁹ 1864 Idaho Terr. Sess. Laws p. 269 § 467 (hanging).

⁴⁰ 1978 Idaho Sess. Laws 70 § 1 (lethal injection).

⁴¹ IDAHO CODE § 19-2716 (Michie 1982) (providing for execution by lethal injection unless the director of department of corrections deems the firing squad more practical).

⁴² 1839 Ill. Laws div. 15 § 156 (hanging).

⁴³ 1927 Ill. Laws div. 14 § 1 (electrocution).

⁴⁴ 1983 Ill. Laws 83-233 § 1 (lethal injection); 725 ILL. COMP. STAT. 5/119-5(a)(1) (1983) (amended 1992).

⁴⁵ 1889 Ind. Acts art. 22 § 367 (hanging).

⁴⁶ 1913 Ind. Acts 315 § 1 (electrocution).

⁴⁷ IND. CODE § 35-38-6-1(a) (1983) (amended 1995) (lethal injection).

⁴⁸ 1878 Iowa Acts 165 § 9 (hanging).

KANSAS (KS)

1872–1906:	hanging ⁵⁰
1907–1934:	no death penalty ⁵¹
1935–1993:	hanging ⁵²
1994–present:	lethal injection ⁵³

KENTUCKY (KY)

1894–1909:	hanging ⁵⁴
1910–1997:	electrocution ⁵⁵
1998–present:	lethal injection (unless the condemned inmate sentenced before the effective date of the Act chooses electrocution) ⁵⁶

LOUISIANA (LA)

1884–1939:	hanging ⁵⁷
1940–1989:	electrocution ⁵⁸
1990–present:	lethal injection (unless the condemned inmate sentenced before the effective date of the Act chooses electrocution) ⁵⁹

⁴⁹ 1965 Iowa Acts 435, 436 (death penalty abolished).

⁵⁰ 1872 Kan. Sess. Laws 166 § 2 (hanging).

⁵¹ 1907 Kan. Sess. Laws 188 §§ 1, 2 (death penalty abolished).

⁵² 1935 Kan. Sess. Laws 154 § 1 (death penalty reinstated); 1935 Kan. Sess. Laws 155 § 1 (hanging).

⁵³ KAN. STAT. ANN. § 22-4001(a) (1993) (amended 1994) (lethal injection). The 1994 law was not retroactive. 1994 Kan. Sess. Laws 252 § 25.

⁵⁴ KY. STAT. ANN. 36 § 1137 (1894) (hanging).

⁵⁵ 1910 Ky. Acts 38 § 1 (electrocution). The 1910 law did not apply to offenses committed before its passage. *Id.* § 10.

⁵⁶ KY. REV. STAT. ANN. § 431.220 (1)(a)–(1)(b) (Michie 1998) (providing for execution by lethal injection unless the condemned inmate who received the death sentence before March 31, 1998, affirmatively chooses electrocution). Currently in Kentucky, there are only thirty inmates remaining who can choose between electrocution or lethal injection. See www.cor.state.ky.us.

⁵⁷ 1884 La. Acts p. 166 § 983 (hanging).

⁵⁸ 1940 La. Acts 14 § 1 (electrocution). The 1940 electrocution law did not expressly indicate retroactive operation. However, in *State ex rel. Pierre v. Jones*, 9 So.2d 42 (La. 1942), the Supreme Court of Louisiana held that the electrocution statute should apply retroactively to those who had been sentenced to hang, emphasizing that “electrocution is recognized as a more humane and less painful manner or means of carrying out the death penalty than by hanging.” *Id.* at 43.

⁵⁹ LA. REV. STAT. ANN. § 15:569 (A-B) (West 1991) (providing for execution by electrocution for inmates sentenced to death prior to September 15, 1991, and execution by lethal

MAINE (ME)

1841–1886:	hanging ⁶⁰
1887–present:	no death penalty ⁶¹

MARYLAND (MD)

1809–1954:	hanging ⁶²
1955–1993:	lethal gas ⁶³
1994–present:	lethal injection (unless the condemned inmate sentenced before the effective date of the Act chooses lethal gas) ⁶⁴

MASSACHUSETTS (MA)

1835–1897:	hanging ⁶⁵
1898–1981:	electrocution ⁶⁶
1975–1981:	death penalty judicially abolished ⁶⁷

injection for inmates sentenced to death after September 15, 1991). Notably, in practice, Louisiana has executed only by lethal injection since the change in statute. *See* Telephone Interview with Cathy Fontenot, Director of Classification, Louisiana State Penitentiary (Aug. 22, 2001) (noting that after Louisiana's 1991 switch to lethal injection, all death warrants issued by judges have specified execution by lethal injection irrespective of the wording of the Louisiana state statute; on July 22, 1990, Andrew Jones was the last person executed by electrocution in Louisiana).

⁶⁰ ME. REV. STAT. tit. 12, 168 § 10 (1841) (hanging).

⁶¹ 1887 Me. Laws 133 (death penalty abolished).

⁶² 1809 Md. Laws 138 § 16 (hanging).

⁶³ 1955 Md. Laws 625 § 1 (lethal gas). The 1955 law did not apply to offenses committed prior to June 1, 1955 (one year before the Act's effective date of June 1, 1956). *Id.*

⁶⁴ 1994 Md. Laws 5 § 1 (lethal injection); 1994 Md. Laws 5 § 2 (lethal injection, or lethal gas at the condemned's election, if the condemned's death sentence was imposed prior to the Act's effective date; lethal injection if the pre-enactment condemned fails to choose a method); MD. CODE ANN. art. 27, § 627 (1957) (amended 1994) (lethal injection). All Maryland pre-enactment prisoners electing to be executed by lethal gas were required to provide a written request for lethal gas within 60 days after the Act's effective date of March 25, 1994. Their right to a lethal gas execution would be waived if they made no such timely request. *See* 1994 Md. Laws 5 § 2. Currently, no prisoner now on Maryland's death row elected lethal gas by May 24, 1994, the last day of the election period. Therefore, Maryland's pre-enactment choice provision no longer has practical significance.

⁶⁵ MASS. REV. STAT. 139 § 13 (1835) (hanging).

⁶⁶ 1898 Mass. Acts 326 § 6 (electrocution). The 1898 law did not apply to persons sentenced to death for offenses committed prior to the effective date of the Act. *Id.* § 8.

⁶⁷ In *Commonwealth v. O'Neal*, 339 N.E.2d 676, 687–88 (Mass. 1975), and *Commonwealth v. Harrington*, 323 N.E.2d 895, 901 (Mass. 1975), the Supreme Judicial Court of Massachusetts

1982–present:	electrocution, unless the condemned inmate chooses lethal injection ⁶⁸
1984–present:	death penalty judicially abolished ⁶⁹

MICHIGAN (MI)

1816–1845:	hanging ⁷⁰
1846–present:	no death penalty ⁷¹

MINNESOTA (MN)

1905–1910:	hanging ⁷²
1911–present:	no death penalty ⁷³

MISSISSIPPI (MS)

1906–1939:	hanging ⁷⁴
1940–1953:	electrocution (hanging for condemned inmates sentenced before the effective date of the Act unless they choose electrocution) ⁷⁵
1954–1983:	lethal gas (electrocution for condemned inmates sentenced before the effective date of the Act unless they choose lethal gas) ⁷⁶

struck down the death penalty statute as unconstitutional.

⁶⁸ 1982 Mass. Acts 554 § 6 (electrocution or lethal injection at the condemned's election; electrocution if the condemned fails to choose a method). The 1982 law did not apply to offenses committed prior to the effective date of the Act, January 1, 1983. *Id.* § 8.

⁶⁹ In *Commonwealth v. Colon-Cruz*, 470 N.E.2d 116 (Mass. 1984), the Supreme Judicial Court of Massachusetts again declared the state's death penalty statute unconstitutional. *Id.* at 119–34. While the death penalty statute remains on the books, it is effectively abolished. Furthermore, no one has been executed in Massachusetts since 1949. See *High Court Will Be Asked For Ruling on Death Penalty Law*, BOSTON GLOBE, May 6, 1984, at 31; Jeremy Crockford, *Death Penalty Vote Sought*, PATRIOT LEDGER, Aug. 3, 1995, at 1.

⁷⁰ 1816 Mich. Terr. Laws p. 134 § 64 (hanging).

⁷¹ MICH. REV. STAT. tit. 30, ch. 153, § 1 (1846) (abolishing the death penalty).

⁷² Minn. Rev. Laws 104 § 5419 (1905) (hanging).

⁷³ 1911 Minn. Laws 387 § 1 (death penalty abolished).

⁷⁴ MISS. CODE ANN. tit. 31, ch. 168 § 11 (1906) (hanging).

⁷⁵ 1940 Miss. Laws 242 § 1 (electrocution); 1940 Miss. Laws 242 § 8 (electrocution or hanging at the condemned's election if the condemned's death sentence was imposed prior to the Act's effective date; hanging if the condemned fails to choose a method).

⁷⁶ 1954 Miss. Laws 220 § 1 (lethal gas); *id.* at § 4 (lethal gas or electrocution at the condemned's election if the condemned's death sentence was imposed prior to the Act's effective date; electrocution if the condemned fails to choose a method).

1984–1997:	lethal injection (lethal gas for condemned inmates sentenced before the effective date of the Act) ⁷⁷
1998–present:	lethal injection ⁷⁸

MISSOURI (MO)

1866–1936:	hanging ⁷⁹
1937–1987:	lethal gas ⁸⁰
1988–present:	lethal gas or lethal injection; statute leaves unclear at whose election ⁸¹

MONTANA (MT)

1895–1982:	hanging ⁸²
1983–1996:	hanging, unless the condemned inmate chooses lethal injection ⁸³
1997–present:	lethal injection ⁸⁴

⁷⁷ 1984 Miss. Laws 448 § 2 (lethal injection; lethal gas if the condemned's death sentence was imposed prior to the Act's effective date); MISS. CODE ANN. § 99-19-51(1) (1972) (amended 1994).

⁷⁸ MISS. CODE ANN. § 99-19-51 (1972) (amended 1998) (lethal injection). The 1998 amendment deleted the provision allowing for executions in the gas chamber.

⁷⁹ MO. REV. STAT. 214 § 27 (1866) (hanging).

⁸⁰ 1937 Mo. Laws p. 222 § 1 (lethal gas). The 1937 law did not expressly indicate retroactive operation. However, in *State v. Brockington*, 162 S.W. 2d 860 (Mo. 1942), the Supreme Court of Missouri held that the lethal gas statute should apply retroactively to those sentenced to hanging. *See id.* at 860–61.

⁸¹ MO. REV. STAT. § 546.720 (1988) (lethal injection or lethal gas). The 1988 law did not expressly indicate retroactive operation. 1988 Mo. Laws p. 985 § A (lethal gas or lethal injection). In addition, the 1988 law states only that "[t]he manner of inflicting the punishment of death shall be by the administration of lethal gas or by means of the administration of lethal injection." *Id.* It thus leaves unclear who decides what method of execution to use. In practice, the Director of the Missouri Department of Corrections decides which method to use for an execution. Lethal injection is the Director's method of choice now and for the foreseeable future because the gas chamber is not appropriately equipped. *See* Telephone Interview with Tim Kniest, Public Information Officer, Missouri Dep't of Corrections (Aug. 7, 2001).

⁸² MONT. CODE tit. VIII, ch. 2, § 2255 (1895) (hanging).

⁸³ 1983 Mont. Laws 411 § 4 (hanging or lethal injection at the condemned's election; hanging if the condemned fails to choose a method); MONT. CODE ANN. § 46-19-103(3) (1983) (amended 1989).

⁸⁴ MONT. CODE ANN. § 46-19-103(3) (1983) (amended 1997) (lethal injection). The 1997 amendment abolished hanging entirely.

NEBRASKA (NE)

1895–1912:	hanging ⁸⁵
1913–present:	electrocution ⁸⁶

NEVADA (NV)

1885–1911:	hanging ⁸⁷
1912–1920:	hanging or firing squad at the condemned inmate's election; court's choice if defendant fails to choose ⁸⁸
1921–1982:	lethal gas ⁸⁹
1983–present:	lethal injection ⁹⁰

NEW HAMPSHIRE (NH)

1891–1985:	hanging ⁹¹
1986–present:	lethal injection at the election of the commissioner of corrections; hanging if injection is “impractical” ⁹²

⁸⁵ NEB. COMP. STAT. 51 § 7276 (1895) (hanging).

⁸⁶ 1913 Neb. Laws 32 § 1 (electrocution); NEB. REV. STAT. § 29-2532 (1943) (electrocution). The 1913 law did not apply to offenses committed prior to its effective date. 1913 Neb. Laws 32 § 1. In January, 2001, bills were introduced by Sens. Jon Bruning and Kermit Brashear to replace electrocution with lethal injection. L.B. 62, 97th Leg., 1st Reg. Sess. (Ne. 2001); L.B. 356, 97th Leg., 1st Reg. Sess. (Ne. 2001). It is unlikely that these will be passed this year. However, two court rulings within the past year have found that Nebraska's four-jolt method of electrocution violates state law. *See* Todd von Kampen, *Sticking with 4 Jolts for Now, Two Officials Say A Second Judge's Ruling Against How the Electric Chair is Used Won't Prompt Quick Changes*, OMAHA WORLD-HERALD, Feb. 23, 2001, at 9; *see also* NEB. REV. STAT. § 29-2532 (1943) (“The mode of inflicting the punishment of death, in all cases, shall be by causing to pass through the body of the convicted person a current of electricity of sufficient intensity to cause death; and the application of such current shall be continued until such convicted person is dead.”).

⁸⁷ NEV. GEN. STAT. ANN. 21 § 4348 (1885) (hanging).

⁸⁸ NEV. REV. STAT. p. 2039 § 7281 (1912) (hanging or firing squad at the condemned's election; the court's choice if the condemned fails to choose a method). The 1912 law did not expressly indicate retroactive operation.

⁸⁹ 1921 Nev. Stat. 246 § 1 (lethal gas). The 1921 lethal gas law did not expressly indicate retroactive operation.

⁹⁰ NEV. REV. STAT. ANN. 176 § 176.355(1) (Michie 1983) (amended 1995) (lethal injection). The 1983 law did not expressly indicate retroactive operation.

⁹¹ N.H. PUB. STAT. 255 § 6 (1891) (hanging).

⁹² N.H. REV. STAT. ANN. § 630:5 (XIII-XIV) (1986) (providing for execution by lethal injection unless the director of the department of corrections deems hanging more practical). The

NEW JERSEY (NJ)

1898–1905:	hanging ⁹³
1906–1982:	electrocution ⁹⁴
1983–present:	lethal injection ⁹⁵

NEW MEXICO (NM)

1880–1928:	hanging ⁹⁶
1929–1954:	electrocution ⁹⁷
1955–1978:	lethal gas ⁹⁸
1979–present:	lethal injection (electrocution or lethal gas, respectively, for condemned inmates sentenced before the effective dates of the electrocution and lethal injection Acts) ⁹⁹

1986 law stated that “[t]his act shall apply to all executions carried out on or after January 1, 1987, irrespective of the date sentence was imposed.” 1986 N.H. Laws § 82:2.

⁹³ 1898 N.J. Laws p. 237 § 127 (hanging).

⁹⁴ 1906 N.J. Laws 79 § 1 (electrocution). The 1906 law went into effect on March 1, 1907, and applied only to crimes committed after that date. *Id.* § 14.

⁹⁵ 1983 N.J. Laws 245 (lethal injection); N.J. REV. STAT. § 2C:49-2 (1983) (lethal injection). The 1983 law did not expressly indicate retroactive operation.

⁹⁶ 1880 N.M. Laws p. 254 § 6 (hanging).

⁹⁷ 1929 N.M. Laws 69 § 11 (electrocution). The 1929 law did not expressly indicate retroactive operation. However, in *Woo Dak San v. State*, 7 P.2d 940 (N.M. 1931), the Supreme Court of New Mexico held that the new law substituted electrocution for hanging as the method of execution, even for those individuals under a sentence of hanging on the effective date of the statute. *See id.* at 941.

⁹⁸ 1955 N.M. Laws 127 § 1 (lethal gas). The 1955 law did not apply to capital offenses committed prior to the Act’s effective date. *Id.* § 3.

⁹⁹ 1979 N.M. Laws 150 § 8 (lethal injection); N.M. STAT. ANN. § 31-14-11 (Michie 1978) (lethal injection) (“All references in the laws of the state of New Mexico relating to execution by electrocution or by lethal gas shall, insofar as such provisions are applicable, apply to, and mean, execution by means of injection, except as to capital offenses already committed.”). The 1979 law did not apply to capital offenses committed prior to the Act’s effective date of July 1, 1979. *See* 1979 N.M. Laws 150 § 10. However, there is no inmate who is subject to any method of execution other than lethal injection. *See* Telephone Interview with John Shanks, Deputy Secretary for Operations with the New Mexico Department of Corrections (Aug. 3, 2001) (explaining that there are no inmates on New Mexico’s death row who were there before 1979, when the lethal injection statute was enacted).

NEW YORK (NY)

1778–1887:	hanging ¹⁰⁰
1888–1964:	electrocution ¹⁰¹
1965–1973:	no death penalty (except for the murders of peace officers engaged in their duties or for the murders committed by prisoners serving a term of life imprisonment) ¹⁰²
1974–1994:	electrocution ¹⁰³
1977–1983:	part of the mandatory death penalty judicially abolished ¹⁰⁴
1984–1994:	remainder of the mandatory death penalty judicially abolished ¹⁰⁵
1995–present:	lethal injection ¹⁰⁶

NORTH CAROLINA (NC)

1883–1908:	hanging ¹⁰⁷
1909–1934:	electrocution ¹⁰⁸

¹⁰⁰ 1886 N.Y. Laws 19 (Act passed on Mar. 30, 1778) (hanging).

¹⁰¹ 1888 N.Y. Laws 489 § 5 (electrocution). In 1886, Governor David B. Hill appointed a commission to find a method of execution that was “more humane than hanging.” Denno, *Electrocution*, *supra* note 1, at 566–67. The 1888 law switching to electrocution did not apply to any offenses committed prior to the Act’s effective date. *See id.* at 573 (noting that under New York’s Electrical Execution Act, anyone convicted of a capital crime after January 1, 1889, would be electrocuted rather than hanged).

¹⁰² 1965 N.Y. Laws 321 § 1 (death penalty partially abolished). The 1965 statute abolished the death penalty except for the murders of peace officers engaged in their duties or for the murders committed by prisoners serving a term of life imprisonment. *Id.*

¹⁰³ 1974 N.Y. Laws 367 § 2 (death penalty reinstated; electrocution). The 1974 statute reinstated the death penalty and made the penalty mandatory for murderers of police officers or prison workers and for murders committed by inmates serving a term of life imprisonment. *Id.*

¹⁰⁴ In *People v. Davis*, 371 N.E.2d 456 (N.Y. 1977), the New York Court of Appeals held unconstitutional the statutes that imposed mandatory death sentences for certain enumerated crimes. *See id.* at 463–64.

¹⁰⁵ In *People v. Smith*, 468 N.E.2d 879 (N.Y. 1984), the New York Court of Appeals invalidated the last remaining mandatory death penalty provision, which imposed the death sentence for murder by an inmate serving a term of life imprisonment. *See id.* at 896–98.

¹⁰⁶ 1995 N.Y. Laws 1 § 32 (lethal injection); N.Y. CORRECT. LAW § 658 (McKinney 1995) (lethal injection). According to 1995 N.Y. Laws 1 § 38, “[t]his act shall take effect on [Sept. 1, 1995] and shall apply only to offenses committed on or after such date.”

¹⁰⁷ N.C. CODE p. 861, Index (1883) (hanging).

¹⁰⁸ 1909 N.C. Sess. Laws 443 § 1 (electrocution). The 1909 law did not apply to crimes committed before the law’s effective date. *Id.*

1935–1982:	lethal gas ¹⁰⁹
1983–1997:	lethal gas, or lethal injection at the defendant's election; lethal gas if the defendant fails to choose ¹¹⁰
1998–present:	lethal injection ¹¹¹

NORTH DAKOTA (ND)

1895–1914:	hanging ¹¹²
1915–1972:	no death penalty (except for first degree murder committed by a prisoner serving a life sentence for first degree murder) ¹¹³
1973–present:	no death penalty ¹¹⁴

OHIO (OH)

1835–1895:	hanging ¹¹⁵
1896–1992:	electrocution ¹¹⁶
1993–2000:	electrocution, unless the condemned inmate chooses lethal injection ¹¹⁷

¹⁰⁹ 1935 N.C. Sess. Laws 294 § 1 (lethal gas). The 1935 law did not apply to crimes committed before its effective date. See *State v. Brice*, 197 S.E. 690, 691 (N.C. 1938) (noting that because the crime occurred before the enactment of the 1935 statute, the defendant would be administered electrocution rather than lethal gas); *State v. Hester*, 182 S.E. 738, 740–41 (N.C. 1935) (indicating that the language concerning which offenses pertained to the 1935 Act was identical to, and modeled from, the 1909 statute).

¹¹⁰ 1983 N.C. Sess. Laws 678 § 1 (lethal gas, or lethal injection at the condemned's election; lethal gas if the condemned fails to choose a method); N.C. GEN. STAT. § 15-187 (1983). It seems that the 1983 law did not apply to crimes committed before the statute's effective date.

¹¹¹ N.C. GEN. STAT. § 15-187 (1983) (amended 1998) (abolishing death by electrocution and lethal gas and providing for execution by lethal injection only). The 1998 amendment rewrote the section providing that condemned inmates would be executed by lethal gas unless affirmatively choosing to be executed by lethal injection. *Id.*

¹¹² N.D. REV. CODE § 8319 (1895) (hanging).

¹¹³ 1915 N.D. Laws 63 § 1 (death penalty partially abolished). The 1915 bill did not abolish the death penalty for first degree murder committed by a prisoner serving a life sentence for first degree murder. *See id.*

¹¹⁴ 1973 N.D. Laws 116 § 41 (death penalty abolished). The 1973 law abolished the death penalty for all crimes. *See id.*

¹¹⁵ 1835 Ohio Acts p. 41 § 40 ("An Act Providing for the Punishment of Crimes") (hanging).

¹¹⁶ 1896 Ohio Laws p. 159 § 1 (electrocution). This law applied only to crimes committed from and after July 1, 1896. *Id.* § 5.

¹¹⁷ OHIO REV. CODE ANN. § 2949.22 (A)–(B1) (West 1993) (amended 1994) (providing for execution by electrocution unless the condemned inmate affirmatively chooses lethal injection). The 1993 law did not expressly indicate retroactive application. 1993 Ohio Laws 38 § 1. In July,

2001–present: lethal injection only¹¹⁸

OKLAHOMA (OK)

1890–1912: hanging¹¹⁹
 1913–1950: electrocution¹²⁰
 1951–1976: lethal gas¹²¹
 1977–present: lethal injection¹²²

OREGON (OR)

1874–1913: hanging¹²³
 1914–1919: no death penalty¹²⁴
 1920–1936: reinstated but method unknown
 (hanging presumed)¹²⁵
 1937–1963: lethal gas¹²⁶
 1964–1977: no death penalty¹²⁷
 1978–1983: lethal gas¹²⁸
 1981–1983: death penalty judicially abolished¹²⁹
 1984–present: lethal injection¹³⁰

2001, prison officials at Ohio's Department of Rehabilitation and Correction asked the Ohio Legislature to abolish the use of electrocution because they are concerned that the electric chair may malfunction. Lethal injection would then become the only execution method option. Governor Taft stated that he would support banning Ohio's use of the electric chair. *See National Briefing (Midwest)*, N.Y. TIMES, July 19, 2001, at A18.

¹¹⁸ H.B. 362, 124th Gen. Assem., Reg. Sess. (Ohio 2001).

¹¹⁹ OKLA. TERR. STAT. 72 § 40 (1890) (hanging).

¹²⁰ 1913 Okla. Sess. Laws 113 § 1 (electrocution). The 1913 law did not expressly indicate retroactive operation.

¹²¹ 1951 Okla. Sess. Laws 17 § 1 (lethal gas). The 1951 law provided that the method of execution would be electrocution until a lethal gas chamber was built. *Id.*

¹²² OKLA. STAT. ANN. tit. 22, § 1014(A) (West 1977) (lethal injection). The 1977 law did not expressly indicate retroactive application. 1977 Okla. Sess. Laws 41 § 1.

¹²³ 1874 Or. Laws p. 115 § 1 (hanging).

¹²⁴ 1915 Or. Laws 92 § 1 (abolishing the death penalty).

¹²⁵ 1920 Or. Laws 19 § 1, 21 § 1 (death penalty reinstated). Between 1920 and 1937, the method of inflicting the death penalty was not made clear in the statutes.

¹²⁶ 1937 Or. Laws 274 § 1 (lethal gas). The 1937 law did not apply to offenses committed prior to its effective date. *Id.* § 2.

¹²⁷ 1964 Or. Laws p. 6 art. I (Capital Punishment Bill) (death penalty abolished).

¹²⁸ 1979 Or. Laws 2 § 3 (death penalty reinstated) (Act effective on Dec. 7, 1978); 1979 Or. Laws 2 § 7 (lethal gas).

¹²⁹ In *State v. Quinn*, 623 P.2d 630 (Or. 1981), the Supreme Court of Oregon declared the death penalty statute unconstitutional. *See id.* at 639–44. The statute did not operate for three years.

¹³⁰ 1984 Or. Laws 3 § 7 (lethal injection); OR. REV. STAT. § 137.473(1) (1985) (lethal injection). The 1984 law did not expressly indicate retroactive application.

PENNSYLVANIA (PA)

1860–1912:	hanging ¹³¹
1913–1989:	electrocution ¹³²
1990–present:	lethal injection ¹³³

RHODE ISLAND (RI)

1822–1972:	hanging ¹³⁴
1973–1983:	lethal gas ¹³⁵
1979–1983:	mandatory death penalty judicially abolished ¹³⁶
1984–present:	no death penalty ¹³⁷

SOUTH CAROLINA (SC)

1841–1911:	hanging ¹³⁸
1912–1994:	electrocution ¹³⁹
1995–present:	electrocution, or lethal injection at the defendant's election; lethal injection if the post-enactment defendant fails to choose; electrocution if the pre-enactment defendant fails to choose a method ¹⁴⁰

¹³¹ 1860 Pa. Laws p. 402 tit. vi § 75 (hanging).

¹³² 1913 Pa. Laws 338 § 1 (electrocution). The 1913 law did not apply to offenses committed prior to its approval date. *Id.* § 11.

¹³³ 1990 Pa. Laws p. 572, no. 1990-145, § 1 (lethal injection); 61 PA. CONS. STAT. ANN. § 3004(a) (West 1998) (lethal injection), *repealing* PA. STAT. ANN. tit. 61, § 2121.1 (West 1990) (amended 1995). The 1990 law did not indicate retroactive operation.

¹³⁴ 1822 R.I. Pub. Laws p. 353 § 63 (hanging).

¹³⁵ 1973 R.I. Pub. Laws 280 § 1 (lethal gas). The 1973 law did not expressly indicate retroactive operation. *Id.* § 2.

¹³⁶ In *State v. Cline*, 397 A.2d 1309 (R.I. 1979), the Supreme Court of Rhode Island declared the state's mandatory death penalty unconstitutional. *See id.* at 1309–11.

¹³⁷ 1984 R.I. Pub. Laws 221 § 1 (death penalty abolished).

¹³⁸ S.C. CODE p. 446, Punishment (1841) (hanging) (“on the conviction of a slave or free person of color, for a capital offense”).

¹³⁹ 1912 S.C. Acts 402 § 1 (electrocution).

¹⁴⁰ 1995 S.C. Acts 83 § 25; S.C. CODE ANN. § 24-3-530(A-B) (Law Co-op. 1993) (amended 1995) (providing for execution by electrocution, or lethal injection at the defendant's election; lethal injection if the post-enactment defendant fails to choose a method; electrocution if the pre-enactment defendant fails to choose a method). South Carolina's choice act became effective on June 8, 1995. *See* 1995 S.C. Acts 108 § 2. Currently in South Carolina, there are an undesignated number of inmates remaining who can choose between electrocution or lethal injection. *See* www.state.sc.us/scdc.

SOUTH DAKOTA (SD)

1877–1915:	hanging ¹⁴¹
1915–1938:	no death penalty ¹⁴²
1939–1983:	electrocution ¹⁴³
1984–present:	lethal injection ¹⁴⁴

TENNESSEE (TN)

1858–1912:	hanging ¹⁴⁵
1913–1914:	electrocution ¹⁴⁶
1915–1916:	no death penalty (except for the crime of rape and for convicts serving life terms who have been convicted of any offense previously punishable by death) ¹⁴⁷
1917–1997:	electrocution ¹⁴⁸
1998–1999:	lethal injection (electrocution for condemned inmates sentenced before the effective date of the Act unless they choose lethal injection) ¹⁴⁹
2000–present:	lethal injection (unless the

¹⁴¹ S.D. TERR. REV. CODE p. 902 § 467 (1877) (hanging).

¹⁴² 1915 S.D. Laws 158 §§ 1–3 (death penalty abolished).

¹⁴³ 1939 S.D. Laws 30 § 1 (death penalty reinstated); 1939 S.D. Laws 135 § 11 (electrocution). The 1939 law did not expressly indicate retroactive operation.

¹⁴⁴ 1984 S.D. Laws 181 (lethal injection); S.D. CODIFIED LAWS § 23A-27A-32 (Michie 1984) (lethal injection). The 1984 law did not expressly indicate retroactive operation.

¹⁴⁵ TENN. CODE 2 § 4601 (1858) (hanging).

¹⁴⁶ 1913 Tenn. Pub. Acts 36 § 1 (first executive session) (electrocution). Although the 1913 law did not expressly indicate retroactive operation, the Supreme Court of Tennessee held that the law should be retroactive. *See Shipp v. State*, 172 S.W. 317, 318 (Tenn. 1914) (holding that the legislature intended that the death penalty be imposed “by means of electrocution in all cases where the sentence of death was pronounced after the act of 1913 went into effect, without regard to whether the crime was committed before or after the passage of the act.”).

¹⁴⁷ 1915 Tenn. Pub. Acts 181 § 1 (death penalty partially abolished). The 1915 law did not abolish the death penalty for the crime of rape or for convicts serving life terms convicted of any offense previously punishable by death.

¹⁴⁸ TENN. CODE ANN. § 6442 (1917) (death penalty reinstated; electrocution); TENN. CODE ANN. S 40-23-114 (1932).

¹⁴⁹ TENN. CODE ANN. § 40-23-114 (1932) (amended 1998) (providing for execution by lethal injection for condemned inmates sentenced for an offense committed after January 1, 1999, but execution by electrocution for condemned inmates sentenced for an offense committed prior to January 1, 1999, unless the inmates affirmatively choose lethal injection).

condemned inmate sentenced before the effective date of the Act chooses electrocution)¹⁵⁰

TEXAS (TX)

1836–1922:	hanging ¹⁵¹
1923–1976:	electrocution ¹⁵²
1977–present:	lethal injection ¹⁵³

UTAH (UT)

1852–1897:	firing squad, hanging, or beheading at the court's or condemned's election ¹⁵⁴
1898–1979:	firing squad or hanging at the condemned inmate's election; court's choice if the condemned inmate fails to choose ¹⁵⁵
1980–1982:	firing squad ¹⁵⁶
1983–present:	lethal injection, unless the condemned inmate chooses the firing squad ¹⁵⁷

¹⁵⁰ TENN. CODE ANN. § 40-23-114 (1932) (amended 2000) (providing for execution by lethal injection, unless the condemned inmate sentenced for an offense committed prior to January 1, 1999, affirmatively chooses electrocution).

¹⁵¹ 1836 Repub. Tex. Laws pp. 194–95 § 52 (An Act Punishing Crimes and Misdemeanors) (hanging).

¹⁵² 1923 Tex. Gen. Laws 51 § 1 (electrocution). The 1923 law did not apply to sentences imposed prior to its effective date. *Id.* § 13.

¹⁵³ 1977 Tex. Gen. Laws 138 § 1; TEX. CODE CRIM. PROC. ANN. art. 43.14 (Vernon 1977) (amended 1995) (lethal injection). The 1977 law did not expressly indicate retroactive operation.

¹⁵⁴ 1852 Utah Terr. Laws tit. XII, pp. 142–43 § 125 (“General Definition and Provision as to Crimes and Offenses”) (Mar. 6, 1852) (firing squad, hanging, or beheading at the court's or condemned's election).

¹⁵⁵ UTAH REV. STAT. § 4939 (1898) (firing squad or hanging at the condemned's election; court's choice if the condemned fails to choose a method).

¹⁵⁶ 1980 Utah Laws 15 § 2 (firing squad). The 1980 law did not expressly indicate retroactive application.

¹⁵⁷ UTAH CODE ANN. § 77-18-5.5 (1953) (amended 1983) (firing squad or lethal injection at the condemned's election; lethal injection if the condemned fails to choose a method). The 1983 law did not expressly indicate retroactive operation. 1983 Utah Laws 112 § 1.

VERMONT (VT)

1840–1911:	hanging ¹⁵⁸
1912–1964:	electrocution ¹⁵⁹
1965–present:	no death penalty (with exceptions) ¹⁶⁰

VIRGINIA (VA)

1887–1907:	hanging ¹⁶¹
1908–1993:	electrocution ¹⁶²
1994–present:	lethal injection, unless the condemned inmate chooses electrocution ¹⁶³

WASHINGTON (WA)

1891–1912:	hanging ¹⁶⁴
1913–1918:	no death penalty ¹⁶⁵
1919–1980:	hanging ¹⁶⁶
1981–1996:	hanging, unless the condemned inmate chooses lethal injection ¹⁶⁷
1996–present:	lethal injection, unless the condemned inmate chooses

¹⁵⁸ VT. REV. STAT. 102 § 6 (1840) (hanging).

¹⁵⁹ 1912 Vt. Acts & Resolves 97 § 6 (electrocution). The 1912 law did not apply to offenses committed before its effective date. *Id.* § 8.

¹⁶⁰ 1965 Vt. Acts & Resolves 30 § 1 (death penalty abolished, except for the murder of police and prison employees or a second unrelated murder). Currently, there is still a partial death penalty statute in Vermont. However, the statute applies only to the crime of treason, *see* VT. STAT. ANN. tit. 13, § 3401 (1996), or, relatedly, crimes committed by three or more people, acting in concert, in a time of war or of threatened war, *see id.* § 3484. Electrocution is used when the death penalty is imposed. *Id.* § 7106.

¹⁶¹ VA. CODE 198 § 4062 (1887) (hanging).

¹⁶² 1908 Va. Acts ch. 398 § 1 (electrocution). The 1908 law indicated no retroactive operation. *Id.* § 8.

¹⁶³ VA. CODE ANN. § 53.1-234 (Michie 1994) (electrocution or lethal injection at the condemned's election; lethal injection if the condemned fails to choose a method). The 1994 law did not expressly indicate retroactive operation.

¹⁶⁴ WASH. GEN. STAT. ANN. XIII § 1352 (1891) (hanging).

¹⁶⁵ 1913 Wash. Laws 167 § 1 (death penalty abolished).

¹⁶⁶ 1919 Wash. Laws 112 § 1 (death penalty reinstated (hanging) subject to imposition by special verdict of the jury).

¹⁶⁷ 1981 Wash. Laws 138 § 1 (hanging, or lethal injection at the condemned's election; hanging if the condemned fails to choose a method). The 1981 statute did not expressly indicate retroactive operation.

hanging¹⁶⁸
WEST VIRGINIA (WV)

1899–1948:	hanging ¹⁶⁹
1949–1964:	electrocution ¹⁷⁰
1965–present:	no death penalty ¹⁷¹

WISCONSIN (WI)

1839–1852:	hanging ¹⁷²
1853–present:	no death penalty ¹⁷³

WYOMING (WY)

1887–1934:	hanging ¹⁷⁴
1935–1983:	lethal gas ¹⁷⁵
1984–present:	lethal injection ¹⁷⁶

¹⁶⁸ WASH. REV. CODE ANN. § 10.95.180(1) (West 1981) (amended 1996) (lethal injection or hanging at the condemned's election; lethal injection if the condemned fails to choose a method).

¹⁶⁹ 1899 W. Va. Acts pp. 12–13, ch. 2 (hanging).

¹⁷⁰ 1949 W. Va. Acts pp. 163–67, ch. 37 (electrocution). The 1949 law did not apply to “capital punishment crimes committed prior to the effective date of this act.” *Id.* at 163.

¹⁷¹ 1965 W. Va. Acts 40, art. 11 § 2 (death penalty abolished). The 1965 law expressly indicated retroactive operation. *Id.*

¹⁷² 1839 Wis. Terr. Laws p. 379 § 9 (“An Act to provide for the punishment of offences against the lives and persons of individuals”) (hanging).

¹⁷³ 1853 Wis. Laws 103 § 1 (death penalty abolished).

¹⁷⁴ WYO. REV. STAT. 12 § 3334 (1887) (hanging).

¹⁷⁵ 1935 Wyo. Sess. Laws 22 § 1 (lethal gas). The 1935 law did not apply to offenses committed before its effective date. *Id.* § 2.

¹⁷⁶ 1984 Wyo. Sess. Laws 54 § 1 (lethal injection); WYO. STAT. ANN. § 7-13-904(a) (Michie 1984) (lethal injection). The 1984 Act did not expressly indicate retroactive operation.

APPENDIX 3: EDITED LETHAL INJECTION PROTOCOLS FOR 36 STATES IN 2001

INTRODUCTION

In this appendix, the edited lethal injection protocols for thirty-six states typically are derived verbatim from the available written protocols that states provide (“complete public protocols”). In addition, information on some states is derived from “partially private protocols,” because it was necessary to contact these states by phone or e-mail for information that was not available in the state’s protocol. Lastly, there is no information or a very limited amount of information available from the handful of states with “private protocols;” these states did not have a complete public protocol and failed to provide either a portion of the requested information or any requested information about their lethal injection procedures. The sources for each state’s protocol—public, partially private, or private—can be found in Appendix 1, Tables 19 and 20.*

ARIZONA

EXECUTION INFORMATION

....

Lethal Injection:

Inmates executed by lethal injection are brought into the injection room a few minutes prior to the appointed time of execution. He/she is then strapped to a Gurney-type bed and two (2) sets of intravenous tubes are inserted - one (1) in each arm. The three (3) drugs utilized include: Sodium Pentothal (a sedative intended to put the inmate to sleep), Pavulon (stops breathing and paralyzes the muscular system) and Potassium Chloride (causes the heart to stop). Death by lethal injection is not painful and the inmate goes to sleep prior to the fatal effects of the Pavulon and Potassium Chloride.

* All lethal injection protocols and communications are on file with the author at Fordham University School of Law. The edited contents of this appendix are derived verbatim from the protocols; therefore no grammatical or punctuation changes were made. For the sources of each state’s protocol and a breakdown of states with the three different types of protocols (public, partially private, and private), *see supra* app. 1, tbls. 19 & 20.

ARKANSAS

Procedures for Execution

The lethal injection consists of Sodium Pentothal (lethal dosage), Pancuronium Bromide (muscle relaxant) and Potassium Chloride (stops the heart), administered into saline solution utilizing IV's.

The inmate will be secured in the chair or a gurney depending on method.

CALIFORNIA

Last 24 Hours

About 30 minutes before the scheduled execution, the inmate is given a new pair of denim trousers and blue work shirt to wear. He is escorted into the execution chamber a few minutes before the appointed time and is strapped onto a table. [The chairs previously used for lethal gas executions have been removed.]

The inmate is connected to a cardiac monitor which is connected to a printer outside the execution chamber. An IV is started in two usable veins and a flow of normal saline solution is administered at a slow rate. [One line is held in reserve in case of a blockage or malfunction in the other.] The door is closed. The warden issues the execution order.

The Execution

In advance of the execution, syringes containing the following are prepared:

- 5.0 grams of sodium pentothal in 20-25 cc of diluent
- 50 cc of pancuronium bromide
- 50 cc of potassium chloride

Each chemical is lethal in the amounts administered.

At the warden's signal, sodium pentothal is administered, then the line is flushed with sterile normal saline solution. This is followed by pancuronium bromide, a saline flush, and finally, potassium chloride. As required by the California Penal Code, a physician is present to declare when death occurs.

COLORADO

Execution Day

Thirty minutes prior to the scheduled execution time, the strap down team will remove the inmate from the holding cell and strap the inmate to the execution bed.

Twenty minutes prior to the scheduled execution time or when instructed by the warden, the IV team will insert two intravenous catheters into appropriate veins in the inmate's arms, one to deliver the lethal agents and the other to serve as a back-up in the event of injection failure into the primary catheter.

The warden will read the Execution Warrant to the inmate.

Approximately 8 minutes prior to the scheduled execution time, a select group of witnesses, usually comprised of the victim's family, the prosecuting and defense attorneys, an official from the investigating law enforcement agency, and approved media representatives, are escorted to the witness viewing room.

The warden will disconnect the telephone in the execution room after receiving the order from the Governor and Executive Director to proceed with the execution. The witness viewing window curtain will then be opened.

The warden will verify that the witness room curtain is open, enter the enclosed chemical room, and instruct the injection team, comprised of two anonymous DOC staff, to proceed with the injections.

The injection team shall administer the chemical agents according to the Department's lethal injection procedures, which provides the delivery of a lethal solution of sodium pentothol [sic], pancuronium bromide, and potassium chloride. A saline solution is injected following each chemical injection. Anonymity is achieved in the execution process by requiring the injection team members to alternate in rendering each injection and by marking the chemical bottles by number only.

Two minutes after the chemical agents are injected, the warden will ask the coroner to enter the room, examine the inmate, and pronounce death and the time.

CONNECTICUT

Administration of Capital Punishment

....

B. Assembly of Supplies and Equipment.

1. The Commissioner shall prepare a written order to purchase the lethal substances to be used in the execution of the inmate.
2. The warden shall assemble the supplies and prepare all equipment necessary to perform the execution.

C. Selection of the Execution Personnel.

1. The screening, selection and training of the correctional staff participating in the execution shall be the responsibility of the warden. The identity of the participating staff shall remain confidential and shall only be revealed on a "need-to-know" basis.
2. The Deputy Commissioner of Program or designee shall ensure, to the satisfaction of a Connecticut licensed and practicing physician, that a person or persons is appropriately trained and qualified to act as executioner. Such person(s) shall prepare and secure the necessary materials provided by the Commissioner or designee.
3. The Deputy Commissioner of Program or designee shall ensure, to the satisfaction of a Connecticut licensed and practicing physician, that a person or persons is appropriately trained and qualified to insert an intravenous catheter or catheters into an appropriate vein or veins of the inmate. It shall be the Deputy Commissioner of Program's responsibility to ensure that a physician qualified to certify death is present at the time of execution.

....

CONNECTICUT, cont.**E. Execution Team Preparations.**

1. The warden shall screen, select and train no less than six (6) primary correctional personnel and no less than six (6) alternate correctional personnel from a previously identified pool to assist in conducting the execution procedure. The selected correctional personnel shall be referred to as the Execution Team.

2. The warden shall conduct drills with the Execution Team simulating movement and restraint of the inmate. The warden shall only distribute the Execution Post-Orders, as a security document, to those correctional personnel on a “need-to-know” basis. The warden shall ensure that all members are fully aware of their roles during the procedure, and that the team is prepared to deal with any disruptive behavior.

....

30 Minutes Prior to the Execution.

A. Inmate visits shall be concluded.

B. The supervisor-in-charge shall direct the Execution Team to escort the inmate from the Death Cell to the Execution Enclosure and secure the inmate to the execution surface.

C. A person or persons, properly trained to the satisfaction of a Connecticut licensed and practicing physician, shall connect the heart monitor to the inmate.

D. A person or persons, properly trained to the satisfaction of a Connecticut licensed and practicing physician, shall establish intravenous access. A primary intravenous infusion line shall be inserted in the left arm with a line inserted in the right arm as an alternative.

E. The warden shall accompany the executioner(s) to the Execution Ante Room ensuring that the identity of the executioner(s) remains confidential.

....

CONNECTICUT, cont.**11. Execution Procedure.** Execution procedures shall be as follows:

....

D. At 2:01 a.m. or as soon thereafter as possible, the warden shall direct the executioner(s) to begin injection of the lethal substance. Administration of the lethal substance shall entail the administration of three (3) substances in a three (3) step process.

1. Step One. The first step shall require the administration of 2,500 milligrams (mg) of Thiopental Sodium (a lethal dose), in 50 ml of clear (without visible precipitate) Sodium Chloride 0.9% solution of an approximate concentration of 50 mg/ml or 5%.

2. Step Two. The second step shall require the administration of 100 milligrams (mg) of Pancuronium Bromide (contents of ten (10) 5 ml vials of 2 mg/ml concentration) in 50 ml.

3. Step Three. The third and final step shall require the administration of 120 milliequivalent (mEq) of Potassium Chloride (contents of two (2) 30 ml vials of 2 mEq/ml concentration) in 60 ml.

E. The executioner(s) shall inform the warden when infusion of the lethal substance has been completed. The warden shall direct a designated staff member to close the window coverings and summon the medical examiner/physician to certify the inmate's death.

DELAWARE

According to Gail Stallings Minor, Community Relations Department, Delaware Department of Corrections, Delaware uses the following chemicals in lethal injection executions:

1. Sodium Thiopental - causes the individual to go to sleep. The chemical is given in a lethal amount.
2. Pancuronium Bromide - stops muscle activity and breathing.
3. Potassium Chloride - stops the heart and produces the cause of death which is cardiac arrest.

FLORIDA

Florida's protocol, which follows, is quoted verbatim from Sims v. State, 754 So. 2d 657, n.17 (Fla. 2000). The protocol makes reference to a specific execution.

The written protocol provides general procedures for the prisoner's last meal, the persons authorized in the execution area, the placement of media witnesses, the physical examination of the prisoner prior to the execution, the preparation of the execution chamber, the persons authorized in the execution chamber, the witnesses to the execution, the prisoner's last statement and the administering of the lethal injection.

The witnesses included: James Crosby, warden of the Florida State Prison; William Mathews, a physician's assistant with the DOC; and Michael Moore, Secretary of the DOC. Collectively, they provided the execution-day procedures. On the morning of the execution, the inmate will receive a physical examination, be given a Valium if necessary to calm anxiety, and will receive his or her last meal. Next, the inmate will be taken to the execution room where he will be strapped to a gurney and placed on a heart monitor. The inmate will then be injected with two IV's containing saline solution. He will then be escorted into the execution chamber where the witnesses will be able to view the execution. While the inmate is being prepared, a pharmacist will prepare the lethal substances. In all, a total of eight syringes will be used, each of which will be injected in a consecutive order into the IV tube attached to the inmate. The first two syringes will contain "no less than" two grams of sodium pentothal, an ultra-short-acting barbiturate which renders the inmate unconscious. The third syringe will contain a saline solution to act as a flushing agent.

FLORIDA, cont.

The fourth and fifth syringes will contain no less than fifty milligrams of pancuronium bromide, which paralyzes the muscles. The sixth syringe will contain saline, again as a flushing agent. Finally, the seventh and eighth syringes will contain no less than one-hundred-fifty milliequivalents of potassium chloride, which stops the heart from beating. Each syringe will be numbered to ensure that they are injected into the IV tube in the proper order. A physician will stand behind the executioner while the chemicals are being injected. The physician's assistance will also observe the execution and will certify the inmate's death upon completion of the execution.

Moore testified that these procedures were created with the purpose of "accomplishing our mission with humane dignity [while] carrying out the court's sentence." On the issue of dosage, a defense expert admitted that only one milligram per kilogram of body weight is necessary to induce unconsciousness, and that a barbiturate coma is induced at five milligrams per kilogram of body weight. Thus, two grams of sodium pentothal (i.e., 2000 milligrams) is a lethal dose and certain to cause rapid loss of consciousness (i.e., within 30 seconds of injection). The expert further stated that muscle paralysis occurs at .1 milligram of pancuronium bromide per kilogram of body weight. Thus, fifty milligrams of pancuronium bromide far exceeds the amount necessary to achieve complete muscle paralysis. Finally, the expert admitted that 150 to 250 milliequivalents of potassium chloride would cause the heart to stop if injected quickly into the inmate and that an IV push would qualify as "quickly."

GEORGIA**IV TEAM - DETAILED INSTRUCTIONS****SET UP PROCEDURE:**

1. The warden or designee will have an intravenous infusion device placed in each arm of the condemned and a saline solution available for an infusion medium. Those persons engaged in this activity will be referred to as the IV Team.
2. An IV administration set (Travenol 92CO005 or equivalent) shall be inserted into the outlet of the bag of Normal Saline IV solution. Two (2) IV bags will be set up in this manner.

GEORGIA, cont.

3. The administration set tubing for both set-ups will be connected to the receiving port of the three-way control devices; one for the left arm, the other for the right arm.
4. IV extension tubing (Travenol #2CO066 or equivalent) will be connected to the discharge ports on the right/left three-way control device and shall thereafter be connected to the applicable right/left angiocath/cathlon. Extension tubing will be of sufficient length to accommodate distance from the control device to the IV insertion site.
5. The tubing shall be cleared of air and made ready for use.
6. Angiocath/cathlon devices shall be initiated through standard procedure for such devices. Once infusion of IV solution has been assured, the IV devices shall be secured to the right/left arm as necessary.
7. At this point, the administration sets shall be running at a slow rate of flow (KVO), and ready for the insertion of syringes containing the lethal agents. The warden or his designee, shall maintain observation of both set-ups to ensure that the rate of flow is uninterrupted. **NO FURTHER ACTION** shall be taken until the prearranged signal to start the injection of lethal agents is given by the warden or designee.

INJECTION TEAM - DETAILED INSTRUCTIONS**INJECTION PROCEDURE:**

1. The three-way control device facilitates the movement of infusion fluid from the saline bag and allows for the interdiction of lethal agents. A valve serves to direct which fluid source is entering the IV set-up.
2. When the signal to commence is given by the warden:
 - 2.1 Syringe #1 (Sodium Pentothal) shall be inserted into the designated receiving port of the three-way control device.
 - 2.2 The flow of saline solution will be interrupted by moving the three-way valve assembly to the saline solution receiving port.

GEORGIA, cont.

- 2.3 The contents of Syringe #1 shall commence with a steady even flow of the lethal agent. Only a minimum of force will be applied to the syringe plunger.
- 2.4 When the contents of Syringe #1 has been injected, the three-way valve assembly will be moved so as to effect the return of saline infusion.
- 2.5 Syringe #1 will be replaced by Syringe #2 (Pavulon) and the procedure described in 2.1 through 2.4 will be repeated.
- 2.6 Syringe #2 will be replaced by Syringe #3 (Potassium Chloride) and the procedure described in 2.1 through 2.4 will be repeated.
- 2.7 This procedure shall continue until all three syringes have been used or until the contract physician advises the warden or designee to cease due to the absence of life signs.

11.0 DESIGNATION OF WITNESSES

- 11.2.4 One (1) contract physician - (as designated by Health Services) to provide medical assistance during the execution process.
- 11.2.5 Intravenous (IV) Team, to consist of two (2) Emergency Medical Technicians to insert intravenous ports.
- 11.2.6 Six (6) Correctional Officers to serve as a special escort team who will apply restraints to the condemned during the execution process.
- 11.2.7 Three (3) volunteers, (staff members), to inject solutions into the intravenous ports during the execution process.
- 11.2.8 One (1) Chaplain to administer to the spiritual needs of the condemned and to provide a prayer on the condemned's behalf upon request.
- 11.2.9 Security personnel as appropriate.

....

GEORGIA, cont.**III. DAY OF EXECUTION****16.0 DAY OF EXECUTION****16.3 One Hour Prior to Execution**

One hour prior to the time of execution, designated members (2) of the special escort team will commence the following:

- 16.3.1 The IV Team will perform a check of all necessary equipment and instruments. A self-test or diagnostic check will be conducted on the heart monitor.
- 16.3.2 Special Escort Team members will ensure all straps are in place and functional on the execution gurney.
- 16.3.3 Communications Check: The same procedures will be performed as at three (3) hours prior to the execution as specified in paragraph 16.1.2. The telephone lines between the Commissioner's Office (CP I), the warden's Office (CP2) and the Execution Chamber (CP3) are to remain open thirty (30) minutes prior to execution time.
- 16.3.4 Execution Chamber and Execution Witness Room will be inspected as directed by warden.
- 16.3.5 Assistants and those required by law to attend executions are to be issued additional instructions and escorted to the Execution Chamber and Execution Witness Room as appropriate. The condemned's witnesses, media representatives and the State's witnesses shall be processed, instructed and transported separately as referenced in this section.
-
- 16.3.8 The condemned is escorted to the lethal injection gurney by member(s) of the Special Escort Team, ten (10) minutes prior to the time of the execution.
- 16.3.9 Members of the Special Escort Team are stationed at the gurney and will place the body strap in place immediately.

GEORGIA, cont.

- 16.3.10 The Special Escort Team will attach restraints to arms, legs and body of the condemned.
- 16.3.11 The IV team will place intravenous ports into the veins of both arms of the condemned. The heart monitor reads will be applied to the condemned. If the veins are such that an IV cannot be started, a contract physician will perform the cut down procedure to establish an intravenous port.
- 16.3.12 Witness Room curtains will be opened by a designated staff member and the microphone turned on. The warden will introduce himself to witnesses and issue final instructions regarding the execution.
- 16.3.13 The warden or designee will ask the condemned if he has anything to add to the final statement. Such statements will be limited to two (2) minutes. (Statement shall be recorded by the warden or designee.) A prayer is offered if condemned requests, which is limited to two (2) minutes.
- 16.3.14 The condemned is read essential Order of the Court; the microphone is turned off.
- 16.3.15 All unnecessary staff shall clear the execution chamber.
- 16.3.16 Execution officials take their place behind the partition.
- 16.3.17 Final communication is made to Central Office Command Post. (CP #1)
- 16.3.18 The execution is carried out.
- 16.3.18.1 Three (3) designated staff members inject lethal solution into intravenous tubing leading to ports in the condemned's arm.
- 16.3.18.2 After ten (10) minutes have elapsed, or the heart monitor shows a "flat line" display, the condemned will be checked by two (2) physicians to determine if death has supervened.

GEORGIA, cont.

16.3.18 If condemned shows residual life signs, repeat 16.3.18.1 and 16.3.18.2.

16.3.19 Microphone is turned on- the fact of death is then announced to the witnesses by the warden or designee- the microphone is turned off. The curtains to the Execution Chamber are then closed.

IDAHO

ADMINISTRATIVE POLICY NUMBER: 135

- B. IMSI personnel will inform, in writing, potential official execution witnesses within the criminal justice system.
- C. IMSI personnel will carry out the execution warrant.
 - 1. By statute, the warden of IMSI shall be the official executioner.
 - 2. Execution of the sentence of death shall be by lethal injection.
 - a. The lethal injection series shall consist of:
 - (1) sodium pentothal, as a normal anesthetic;
 - (2) pavulon, a curare preparation, to stop muscle spasming as the anesthetic takes effect; and
 - (3) potassium chloride, the lethal agent to stop the heart.
 - b. injection shall be through intravenous catheter.

ILLINOIS

6. At a predetermined time prior to the execution, the inmate will be removed from his cell and escorted to the execution chamber. A trained person will insert an intravenous catheter which will be utilized to deliver an ultrashort-acting barbiturate in combination with a chemical paralytic agent and potassium chloride or other equally effective substances sufficient to cause death. The identity of the executioner shall not be disclosed. The execution shall occur on the date set for execution by the Court at a time determined by the Department of Corrections. Witnesses will be permitted to observe the execution in accordance with 725 ILCS 5/119-5.

Execution Drugs

Sodium Pentothal - puts the person to sleep

Pancuronium Bromide - stops the breathing

Potassium Chloride - stops the Heart

INDIANA

The protocol of information, printed below, was provided and confirmed by Pam Pattison, Public Information Officer, Indiana Department of Correction, in response to a series of questions.

As per your request, the Indiana Department of Correction is providing you with the following information:

- * Chemicals used in lethal injection in order of administration: sodium pentothal, saline, pancuronium bromide, saline, and potassium chloride.
- * Procedure: The time frame between escorting the offender from the holding cell to the pronouncement of death is approximately one (1) hour, twenty (20) minutes. The time frame from the time the IV is inserted to the time of pronouncement of death is approximately twenty-five (25) minutes.
- * Chronology of a scheduled execution.
- * Statute regarding execution in the state of Indiana

INDIANA, cont.**Chronology leading up to an execution;**

3. Shortly after midnight, the inmate is escorted from the holding cell, and placed on a gurney, secured to the gurney and moved to execution room.
4. Curtains are only closed when the offender is brought to the holding cell.
5. After all preparatory work has been completed, the witnesses are moved into area, seated, and the blinds are opened. The process begins and ends. The blinds are closed and the physician then makes pronouncement of death.

a) preparatory work: the catheters are put in place and the tubing has been run. The catheters are placed in an extremity.

Witnesses will see offender laying on gurney, with a sheet covered to the offender's shoulders. There are two staff members in the room during the process.

How much time elapses between an offender being placed on gurney and the pronouncement of death? 20 to 45 minutes.

Witness list: who/how many? The offender is allowed up to ten individuals. It is the policy of the Department not to release names.

KANSAS

Bill Miskell, Public Information Officer, the Kansas Department of Corrections, provided the following information in response to a request for a lethal injection protocol in Kansas:

We do not have specific protocols yet in policy. We do not have anybody who is that close to an execution and we just don't have the policies done. If you need further assistance call me at 785-296-5873.

KENTUCKY

According to the Kentucky General Counsel's Office, Kentucky does not have a lethal injection protocol apart from the Kentucky death penalty statute, cited below.

431.220 Execution of death sentence.

(1) (a) Except as provided in paragraph (b) of this subsection, every death sentence shall be executed by continuous intravenous injection of a substance or combination of substances sufficient to cause death. The lethal injection shall continue until the prisoner is dead.

(b) Prisoners who receive a death sentence prior to March 31, 1998, shall choose the method of execution described in paragraph (a) of this subsection or the method of execution known as electrocution, which shall consist of passing through the prisoner's body a current of electricity of sufficient intensity to cause death as quickly as possible. The application of the current shall continue until the prisoner is dead. If the prisoner refuses to make a choice at least twenty (20) days before the scheduled execution, the method shall be by lethal injection.

(2) All executions of the death penalty by electrocution or lethal injection shall take place within the confines of the state penal institution designated by the Department of Corrections, and in an enclosure that will exclude public view thereof.

(3) No physician shall be involved in the conduct of an execution except to certify cause of death provided that the condemned is declared dead by another person.

Effective: March 31, 1998

History: Amended 1998 Ky. Acts ch. 220, sec. 1, effective March 31, 1998. – Amended 1992 Ky. Acts ch. 211, sec. 84, effective July 14, 1992. – Amended 1986 Ky. Acts ch. 331, sec. 51, effective July 15, 1986. – Amended 1974 Ky. Acts ch. 74, Art. V, sec. 2. – Recodified 1942 Ky. Acts ch. 208, sec. 1, effective October 1, 1942, from Ky. Stat. sec. 1137-1.

LOUISIANA

According to Cathy Fontenot, Director of Classification, Louisiana State Penitentiary, Louisiana uses the following chemicals in a lethal injection execution.

1. Thiopental Sodium - causes the individual to go to sleep. It is given in a lethal amount.
2. Pancuronium Bromide - stops muscle activity and breathing.
3. Potassium Chloride - stops the heart and produces the cause of death, which is cardiac arrest.

The following procedures are derived from the Louisiana Department Regulation, No. C-03-001, December 20, 1999, pages 2-4.

11. PROCEDURES.

- A. The witnesses will enter the witness room where they will receive a copy of the inmate's written last statement, if a written statement is issued.
- B. The inmate will then be taken to the lethal injection room by the escorting officers. Once in the room, the inmate will be afforded the opportunity to make a last verbal statement if he so desires. He will then be assisted onto the lethal injection table and properly secured to the table by the officers. Once the officers exit the room, the warden will close the curtain to the witness room and signal the I-V- technician to enter. The IV technician will appropriately prepare the inmate for execution and exit the room. The warden will reopen the witness room curtain.
- C. The person designated by the warden and at the warden's direction, will then administer, by intravenous injection, a substance or substances in a lethal quantity into the body of the inmate until he is deceased.
- D. At the conclusion of the execution, the coroner or his deputy shall pronounce the inmate dead. The deceased shall then be immediately taken to an awaiting ambulance for transportation to a place designated by the next of kin or in accordance with other arrangements made prior to the execution.

MARYLAND

According to Priscilla Doggett, Public Information Officer in the Maryland Department of Corrections, the Department does not like to divulge the chemicals used in a lethal injection execution. However, when told that the most common mixture in other states includes sodium thiopental, pancuronium bromide and potassium chloride—she confirmed that those were the same chemicals used in Maryland as well.

The following information is derived from <http://ns1.dpscs.state.md.us/doc/cap/history.htm>.

The condemned person is strapped onto a padded support. A technician inserts a needle into a vein on the arm to begin a flow of saline solution. At a hidden signal from the warden, a lethal combination of drugs is injected into the IV line, which first puts the condemned person to sleep, then paralyses [sic] the breathing muscles and stops the heart. The procedure lasts about seven minutes. The worst physical pain being the prick of a needle.

MISSISSIPPI

Mississippi has no protocol. Instead, Jennifer Griffin, Communications Director, Mississippi Department of Corrections, asked that she be sent specific questions. The following is her e-mailed response:

The chemicals used in the lethal injection executions with the Mississippi Department of Corrections are as follows:

- Sodium Pentothal, 2.0 Gm., 1 Syringe
- Normal Saline, 10-15cc., 2 Syringes
- Pavulon, 50 mgm per 50 cc., 3 Syringes
- Potassium Chloride, 50 milequiv. per 50 cc., 3 Syringes

....

MISSISSIPPI, cont.**Execution Process**

This is currently being revised. In the past executions were conducted at midnight. The new law states by 6:00 p.m. What will remain in effect is that the Commissioner will declare an institutional emergency and place the institution on lockdown 24 hours before the scheduled execution. The Lethal Injection Team will inventory all equipment. There will be staff briefings of the Emergency Response Team throughout the 24 hours. Media will arrive 12 to 6 hours prior to the scheduled execution. Offender's family members and victim's family members will arrive at predetermined times. The families will be housed in separate buildings and assisted by MDOC staff. Upon request of the condemned offender, clergy is allowed access to the holding cell. The condemned offender is given his meal.

With new procedures being worked on presently, the times of the following actions are yet to be determined: the condemned offender is escorted from the holding cell and strapped to the gurney. Catheter [sic] are placed in each arm and a saline solution is started. Witnesses are escorted into the observation rooms. The Superintendent asks the condemned offender if he wishes to make a final statement. The Executioner shall advise the Superintendent that the lethal injection system is prepared and ready for use. The Superintendent will contact the Deputy Commissioner to verify that no stay of execution has been granted. The Superintendent directs the Executioner to proceed. The Executioner will then administer the lethal injection. The Superintendent or his designee will advise the Deputy Commissioner or his designee by phone that the execution has begun. Constant voice to voice communication shall be established and maintained between the Superintendent, Commissioner, Governor and Attorney General's Office throughout the execution.

When the offender no longer exhibits signs of life, the Superintendent shall request the physical [sic] and/or the coroner be brought into the execution chamber and pronounce the offender's death. The Superintendent will then order the witnesses escorted from the observation room to the outside of the unit. The IV lines are disconnected, the body removed from the execution room, washed and re-clothed, if necessary, and placed in the hearse at the rear of the unit. The body is immediately released to family. If no family claims the body, MDOC is responsible for burial.

MISSOURI

There is no written lethal injection protocol that details how lethal injections will take place in Missouri. John Fougere, Public Information Office, Missouri Department of Corrections, furnished information on the chemicals that Missouri uses: 1. Sodium Pentothal, 2. Pancuronium Bromide, and 3. Potassium Chloride.

MONTANA

Policy No. DOC 3.6.1.

Method of Execution

The punishment of death must be inflicted by administration of a continuous intravenous injection of a lethal quantity of an ultra fast acting barbiturate in combination with a chemical paralytic agent, until a coroner pronounces that the offender is dead according to accepted standards of medical practice.

Executioner

1. The execution must be performed by a person selected by the warden and trained to administer a lethal injection.
2. The person administering the injection need not be a physician, registered nurse or licensed practical nurse.
3. The warden may also select an alternate executioner(s).
4. The warden or the warden's designee shall supervise the execution.
5. The identity of the executioner and alternate executioner(s) shall remain confidential.

MONTANA, cont.

Equipment and Material Checklist: Execution by Injection

QUAN	ITEM
8	Sodium Pentothal, 500 mgm., w/diluent
15	Pavulon, 10 mgm. ampules
15	Potassium Chloride, 10 milequiv. ampules
2	Valium injection, 10 mgm
10	syringe, 50 cc Lur Lock
4	syringe, 10 cc Lur Lock
4	syringe, 5 cc Lur Lock
40	needle, 18 Ga., 1 ½
16	needle, 25 Ga., 1 1/4
18	angiocath, 14 Ga., 2"
18	angiocath, 19 Ga., 211
18	angiocath, 16 Ga., 211
8	normal saline, IV bag, 1000C
4	Lidocaine HCL, 2%.w/Epinephrine
8	solution injection set, Travenol Code #2CO005S
12	extension set, 35: long; Travenol Code #2CO066
2	stethoscopes
4	boxes of alcohol preps
16	rolls of Kling
4	adhesive tape, 1"
4	adhesive tape, 2"
4	scissors, bandage, Pr.
4	tourniquet
	cut-down set, sterile
4	#15 scalpel with handle, disposable
4	#11 scalpel with handle, disposable
4	hemostat, sterile
3	gloves, surgical size 7 ½, sterile
3	gloves, surgical size 8, sterile
6	surgical mask
1	surgical pack
1	flashlight, w/batteries
3	batteries, flashlight, (spares)
4	forceps tissue 4 3/4
8	ace wraps 3"
2	needle holders
2	bottles xylocaine
2	10 packs sterile gauze

NEVADA

A memo from Glen Wharton, Chief of Classification and Planning of the State of Nevada Department of Prisons Administrative Offices, stated that neither he nor his office can disclose information regarding the protocol for lethal injection. The validity of Mr. Wharton's memo was confirmed by the Carson City Office of the State of Nevada Department of Prisons. The only information that was available was on the Office's website, portions of which are printed below.

The following information is derived from <http://prisons.state.nv.us/prison%20organization.htm>:

At the present time the lawful method of execution is by means of lethal injection. The site of executions is still the chamber in the Nevada State Prison. Inmates on death row are now housed at the Ely State Prison, in Ely, Nevada. A total of 50 persons have been executed in the Department. Eight persons have been executed since the reinstatement of the death penalty. At the time of this writing, there are 89 persons on death row; one being a woman.

The prison became the designated site of executions in the early years of this century. Prior to that, executions were the responsibility of local sheriffs. The first execution took place with the hanging of John Hancock on 9-9-05. The Prison was the site of the first execution in the United States which used lethal gas. This occurred on 2-8-24, when Gee Jon was executed with cyanide gas that was sprayed into a makeshift gas chamber. A gas chamber was constructed in 1929, and a second chamber was placed in the extreme Northeast corner of the old portion of the institution, its current location.

NEW HAMPSHIRE

New Hampshire does not have a written lethal injection protocol. The following information is based on a conversation with Jeff Lyons, Public Information Officer, New Hampshire Department of Corrections.

We don't have a procedure. We haven't had the need for one. 1939 was our last execution. 1961 was the last time that we had someone on death row. There were two people; one was released and the other was given a life sentence. We have been drafting a policy. We probably will end up doing what other states are doing.

Mr. Lyons did not want to provide a copy of the draft policy materials.

NEW JERSEY**DEATH BY LETHAL INJECTION****Introduction**

The passage of Legislative Bill No. 1851 directs the Commissioner of the Department of Corrections to execute capital sentenced individuals confined within the Department by lethal injection. To ensure proper dispatch of the intent of the legislature and to ensure the integrity of the Department, death by lethal injection must be executed in an atmosphere befitting the solemnity of such an act. In light of the above, the following procedural aspect of the death penalty legislation is effected:

A. Medical Preparation Team:

The following medical staff disciplines shall be represented for each execution as noted below:

1. Two Physicians: One physician shall be the Department's Medical Director. One physician shall be assigned from an institution on a rotating basis. In the absence of the Medical Director, an additional physician shall be assigned from an institution. The assignment shall be made, in writing, not later than 5 working days prior to the scheduled execution by the Health Services Coordinator through the institution Superintendent.
In the event that no institution physician is willing to serve on the Medical Preparation Team, the Health Services Coordinator shall hire a licensed physician on a consultant basis. The proper identification materials shall be provided to the Superintendent, State Prison, Trenton, not later than 48 hours prior to the scheduled execution.
2. One Registered Nurse: The nurse assigned shall be assigned by the Health Services Coordinator and shall be from the same institution as the assigned physician; and
3. One Certified IV Therapist: The therapist shall be hired on a consultant basis by the Health Services Coordinator. The proper identification materials shall be provided to the Superintendent, State Prison, Trenton not later than 48 hours prior to the scheduled execution.

Responsibilities of the Medical Preparation Team shall be discussed later in the text.

NEW JERSEY, cont.**B. Medical Monitoring Apparatus and Execution Equipment:**

The following items shall be utilized during the execution process:

1. One folding wheel stretcher with three body restraints and locking wheels;
2. One electro-cardiograph monitor with monitoring capabilities for blood pressure, pulse and heart rate;
3. One emergency cart with defibrillator, oxygen and emergency medications;
4. One intravenous pole, one bag saline IV solution, a standard IV line, two Y connectors with two syringe openings;
5. One body bag constructed of heavy duty plastic or vinyl, with closures.

C. Preparation of the Condemned Inmate:**2. Administration of the Pre-medication:**

- (b) When properly attired, the condemned shall be escorted from his/her cell to the all-purpose room within the Capital Sentenced Unit. At this time, the condemned will be placed on the execution stretcher. Restraints shall be secured:

- across both wrists;
- across both arms and chest;
- across the thigh of both legs; and
- across both ankles.

The stretcher shall contain a rubber padding covered with a white sheet. The condemned shall be covered from the waist down with a white sheet and provided with a pillow for the head.

- (c) Approximately forty-five minutes in advance of the scheduled execution, the institution team physician shall administer the appropriate dosage of Morphine, 15 to 20 mgm or, in the case of narcotic abusers, Valium 2 to 5 mgm, the barbiturate which shall serve as a sedative. This medication shall be administered via intramuscular injection at the discretion of the team physician in the buttocks or deltoid muscle of either arm.

NEW JERSEY, cont.

3. **Insertion of the Intravenous Line:**
Approximately thirty minutes prior to the scheduled execution, the IV therapist shall insert an intravenous line via a heparin lock with a male adaptor into the condemned's left antecubital fossa vein. In the event a useful vein cannot be located in the left arm, the therapist may attempt insertions to other veins in the order noted below:
 - Right antecubital fossa vein of the arm;
 - Left then Right dorsum of the hand;
 - Left then Right dorsal venous network of the ankle.In the event that a useful vein cannot be located in any of the above site locations, the Medical Director shall execute a cut-down procedure to insert the intravenous line.
 4. **Cardiac Monitor Leads and Transport to the Execution Room:**
When the intravenous line has been successfully inserted, the team nurse shall affix the cardiac monitor leads to the patient so as to ensure proper monitoring of the heart rate, blood pressure and pulse. Upon completion of the fixation of cardiac leads, the condemned shall be transported via stretcher to the execution chamber. In addition to the custody cadre, the medical team shall accompany the transport to ensure the intravenous line is not dislodged and that the condemned's physical condition remains stable.
- D. **Execution Suite and Medications:**
1. **Suite Equipment:**
The execution chamber shall be equipped with the following:
 - (a) A cardiac monitor and appropriate lead wires. The monitor shall be positioned as close as possible to the witness window, slanted to the exterior room wall so that the monitor is obscured from the vision of the witnesses but directed to the vision of the team physicians;
 - (b) The emergency cart will be positioned at the exterior wall of the room; and
 - (c) A television camera directed to permit view of the condemned's head, chest and intravenous insertion site.

NEW JERSEY, cont.

The executioner's room shall be equipped with the following:

- (a) One standard IV set with one bag or bottle of saline solution; a standard IV line, two Y connectors with two syringe openings and one adjustable IV pole. In addition, a complete, set of the above shall be located in the room as a ready reserve in the event the primary apparatus fails;
- (b) Two instrument trays, one tray labeled, in red, Thiopental Sodium Solution and one tray labeled, in green, Potassium Chloride;
- (c) One red labeled 800 cc syringe with 5 g. or 100 ml Pentathol placed in the tray labeled Thiopental Sodium Solution;
- (d) One red labeled 800 cc syringe with 100 ml Saline placed in the tray labeled Thiopental Sodium Solution;
- (e) One green labeled 30 cc syringe with 2 mg or 30 ml Potassium Chloride placed in the tray labeled Potassium Chloride;
- (f) One green labeled 30 cc syringe with 2 mg or 30 ml saline placed in the tray labeled Potassium Chloride;
- (g) A television monitor positioned to permit the executioners vision of the condemned's head, chest and intravenous insertion site.

3. Syringe Preparation:

The team nurse, after receipt of the execution medications, shall proceed to the executioner's room where the syringes indicated in section D 1. shall be prepared and placed in the appropriate labeled tray. The team nurse shall not, under any circumstances, advise any person other than the Commissioner of the Department of Corrections of the identity of the syringe carrying the lethal medication. Consequently, there shall be no individual permitted in the executioner's room from the time the team nurse enters the room until the executioners are admitted into the room.

NEW JERSEY, cont.**E. The Execution:****1. Equipment attachments:**

Upon arrival at the execution chamber, the stretcher carrying the condemned shall be affixed to the right entrance wall utilizing the wheel locks provided. The head shall be positioned to the room's far entrance wall.

At this time, the team IV therapist shall attach the cardiac leads to the cardiac monitor which shall then be turned on and verified by the physicians to be in proper working order.

The IV therapist shall connect the intravenous line extending from the executioner's room IV set through portholes in the room wall to the intravenous line inserted in the condemned's vein. The IV therapist shall then be escorted from the execution suite to a waiting area designated by the Superintendent, State Prison, Trenton.

Once completed, the condemned shall be left alone in the execution chamber. The team physicians shall be positioned in the witness room to view the condemned and the cardiac monitor.

2. Injection of Lethal Medication:

Upon order of the Commissioner, or his designate, the executioners shall:

(a) Each procure one syringe from the tray labeled Thiopental Sodium. Each executioner is to simultaneously inject the syringe needle into a Y connector in the intravenous line (each executioner shall utilize a separate Y connector). The medication shall then gradually and simultaneously be injected into the intravenous line. The medication must not be rapidly nor sporadically injected;

(b) View the television monitor and when the condemned has been rendered unconscious, each procure one syringe from the tray labeled Potassium Chloride. Each executioner is to simultaneously inject the syringe needle into a Y connector in the intravenous line (each executioner shall utilize a separate Y connector). The medication shall then gradually and simultaneously be injected into the intravenous line. The medication must not be rapidly nor sporadically injected; and

NEW JERSEY, cont.

- (c) Be led from the executioner's room after the Superintendent, State Prison, Trenton has been advised by the team physicians viewing the cardiac monitor that the condemned has expired. No article or equipment is to be removed from the executioner's room. Upon departure of the executioners, the team physicians shall enter the execution chamber and take vital signs of the condemned.

The Correction Sergeant in charge of the detail shall remove the body restraints, shut off the intravenous line and cut the intravenous line leaving the heparin lock in place. The body of the condemned shall then be placed in the body bag and transported to an awaiting hearse for mortuary preparation.

F. Medical Intervention by the Team Physician:

In any execution, there is the possibility of the grant of a stay of the execution, in the event that such a stay is granted during the execution process and the condemned has not expired, the Superintendent shall immediately order the team physicians to intercede. Witnesses shall be removed from the area. The team physicians shall immediately initiate life saving medical techniques to revive the condemned. When indications of life are present, the condemned shall, as soon as practical, be transported to the St. Francis Medical Center Emergency Room for further treatment as necessary.

NEW MEXICO

Gerges Scott, Public Information Officer for the New Mexico Department of Corrections, provided the PNM (Penitentiary of New Mexico) Policy # 073400. Issue date: 2/26/90. Revised date: 5/30/01. The PNM Policy is reprinted below.

TITLE: EXECUTION OF DEATH SENTENCE**I. DEFINITIONS:**

- A. Penitentiary of New Mexico Death House:** A suitable and efficient room enclosed from public view, located within the walls of the Penitentiary of New Mexico's North Facility, specifically designed and provided with all necessary appliances requisite for carrying into execution the death penalty.

....

NEW MEXICO, cont.**II. PROCEDURE:****A. Method for Punishment of Death**

The manner for inflicting punishment of death shall be by administration of a continuous intravenous injection of a lethal quantity of an ultra-short-acting barbiturate in combination with a chemical paralytic agent.

C. Execution

1. The condemned inmate shall be removed from the holding cell and strapped to the table (Appendix B).
2. Catheters shall be placed in each arm -and a saline solution started (Appendix A. 4).
3. The Penitentiary of New Mexico Warden shall summon and have escorted the witness, Public Information Officer, Media Pool, twelve or less reputable citizens, selected by him, and such peace officers he has deemed expedient to witness the execution, and the inmate's witnesses to the death chamber viewing room. The door shall then be locked by the North Facility Chief of Security. These persons shall be escorted by the North and South Facility Chiefs of Security.

.....
10. The executioner shall then administer the lethal injection (Appendix A.4).
11. When the inmate no longer exhibits signs of life, the Penitentiary of New Mexico Warden shall request the Physician be brought into the death chamber.
12. The door to the Team Room shall be opened and the Physician shall be escorted into the death chamber.
13. The Physician shall then pronounce the inmate's death, record this information in the inmate's medical file, and shall then be escorted out of the death chamber.

.....

NEW MEXICO, cont.**INJECTION TEAM PROCEDURES****PRE-EXECUTION INVENTORY AND EQUIPMENT CHECK**

1. Members of the injection team shall conduct an equipment check of all materials necessary to perform the execution.
2. The inventory shall be conducted less than twenty-four (24) hours, and not more than ninety-six (96) hours prior to the scheduled execution.
3. An inventory check list shall be completed, dated, and initialized by the injection team. (A sample copy of the check list is included as enclosure A. I of this document. Items marked C/1 in the check column shall be carried in by the Injection Team on The evening of the execution).
4. Quantities of items in, or adjacent to, the cabinet in the injection room shall be at least those indicated in the left column of Appendix - A. 1, pages one (1) and Two (2).
5. Expiration and/or sterilization dates of all applicable items shall be checked on each individual item.
 - a. Outdated items (e.g. Normal Saline bags) shall be replaced immediately.
 - b. Sterilized packs bearing a sterilization date in excess of thirty (30) days shall be replaced or resterilized immediately.
6. On the evening of the execution, members of the Injection Team shall enter the injection room at least one hour prior to midnight or the scheduled time of the execution. They shall immediately reinventory the supplies and equipment to ensure that all is in readiness, and if applicable, obtain replacement items from the warden's office vault immediately.

III. IV SET-UP-PROCEDURE

1. The connecting needle of Administration Set (Travenol #2CO05S-or equivalent shall be inserted into outlet of the bag of Normal Saline IV solution (see enclosure Appendix A.2).

NEW MEXICO, cont.

2. The on-off clamp located between the “Y” injection site and the needle adapter shall be removed and discarded. The flow of solution shall be controlled by the Flo-Trol clamp located above the “Y” site.
 - a. The lip of the neoprene diaphragm on the “Y” injection site shall be rolled back so that it can be easily removed for insertion of syringe lips instead of a needle.
 - b. a 35-inch extension set (Travenol #2C0066-or equivalent) shall be connected to the needle adapter of the Administration Set (see enclosure Appendix A-3).
Note: For the set-up for administration into the distal arm, a second Extension Set shall be required due to the additional distance.
3. An Angiocath (Do smaller than 18 Ga. x 2”) shall be connected to the needle adapter of the Extension Set. Optimal injection flow may be achieved with a 12Ga. Or 16 Ga. Angiocath, if the veins will permit the use of the larger size.
4. The tubing shall be clear of air and the Angiocath recovered. The set-up is ready for use.
5. Steps 1 through 6 shall be repeated for the second set-up.
6. The syringes containing the drugs shall be prepared and loaded in the following steps.
 - a. Two 50-cc syringes, each containing 10-50cc of sterile Normal Saline. Label syringes “NS”.
 - b. Three 50-cc syringes, each containing 50 milequiv of Potassium Chloride in 50-cc. Label syringes “3”
 - c. Three 50-cc syringes, each containing 50mg of Pavulon in 50-cc. Label syringes “2”.
 - d. One 50-cc syringe containing 210** Grams of Sodium Pentothal (contents of four 500 mgm vials dissolved in the least amount of diluent possible to attain complete, clear suspension). The Sodium Pentothal, being a Federally controlled drug, shall be prepared last. When it appears that it shall actually be used. Label syringe “1”.

**sic: A Typo. The amount should be 2.0 grams of sodium pentothal. This corrected amount of sodium pentothal is specified in another section of New Mexico’s protocol. See also *supra* app. 1, tbl. 15 (New Mexico) (explaining the typo in New Mexico’s protocol).

NEW MEXICO, cont.

See enclosure Appendix A.4 for a list of syringes and contents. It is noted that three syringes of Pavulon three of Potassium Chloride are prepared, even through the injection procedure only calls for two of each. The extra syringes are to be prepared as "stand-bys", in the event one of the others is dropped in handling during the injection practice.

IV. INJECTION PROCEDURE

1. The Angiocath shall be inserted into the vein of the left arm and secured in place. The flow of Normal Saline shall be started and administered at a slow rate of flow.
2. Step I shall be repeated for the right arm. This line shall be held in reserve as a contingency line, in case of a malfunction or blockage in the first line.
Note: At this point, the solution administration sets shall be running at a slow rate of flow, and ready for insertion of syringes containing the injection agents. Observation of both set-ups to insure that the rate of flow is uninterrupted shall be maintained. NO FURTHER ACTION shall be taken until the prearranged signal to start the injection of lethal agents is given by the warden of the Penitentiary of New Mexico.
3. Witnesses to the execution shall be brought in only after the Normal Saline IVS have been started and are running properly.

WHEN THE SIGNAL TO COMMENCE IS GIVEN BY THE WARDEN

5. The flow of the Normal Saline into the left arm shall be cut off utilizing the Flo-Control clamp.
6. The neoprene diaphragm ("plug") shall be removed from the "Y" injection tube.
7. The tip of Syringe # I (Sodium Pentothal) shall be inserted into the "Y" injection tube and the injection shall commence. A steady even flow of the injection shall be maintained with only a Minimum amount Of force applied to the syringe plunger.
8. When the entire contents of the syringe have been injected, Syringe # 1 shall be removed from the injection tube. A syringe of Normal Saline (Marked 'NA') shall be inserted and the entire contents injected to flush the line.

NEW MEXICO, cont.

9. Next the "NS" syringe shall be removed and one of the, # 2 Syringes (Pavulon shall be inserted. The entire contents shall be injected with slow, even pressure on the syringe plunger. **CAUTION:** if all of the Sodium Pentothal has not been flushed from the line, there is a chance of flocculation forming when coming in contact with the Pavulon, which will block the flow of fluid through the Angiocath. If this should happen, shift over to the contingency line running to the right arm. When the contents of the first # 2 syringe have been injected, repeat with the second # 2 syringe.
10. When both syringes have been injected the second "NS" syringe shall be inserted and the entire contents shall be injected to flush the line.
11. Next the first # 3 syringe (KCl) shall be inserted and the entire contents shall be injected. The second # 3 syringe shall be repeated or until death has been pronounced by the Physician.
12. Upon completion of the injections, or at such earlier time as may be appropriate, the physician shall examine the inmate to pronounce death. After the witnesses have been removed, both IV lines from the veins shall be removed and the tubing shall be passed through the opening into the execution chamber.

LABELED/ MARKED	CONTENTS OF SYRINGES CONTENTS	QUANTITY
#1	Sodium Pentothal, 2.0 Gm. Four 500 mgm Vials dissolved in the least amount of diluent Possible to attain complete, clear suspension.	1 Syringe
N/S	Normal Saline, 10-15cc.	2-Syringes
#2	Pavulon, 50 mgm per 50 cc. (Five 10 cc ampules of 10 mgm each in each syringe).	3-Syringes
#3	Potassium Chloride, 50 milequiv. 1 per 50 cc. (Five 10 cc ampules of 10 milequiv, Each in Each syringe).	3-Syringes

Total Injection: 100cc/100 milequiv., or two Syringes, one made up as a stand by.

NEW MEXICO, cont.**TIE-DOWN TEAM PRACTICE SESSION**

Note: During the practice session, the following procedures will be utilized. Upon completion of the execution the Tie-Down Team shall remove the straps as detailed in Section 3.

1. The condemned inmate shall be escorted from the holding cell into the execution chamber.
2. The condemned inmate shall be ordered to lay down on his/her back on the table.
3. The condemned inmate shall be strapped to the table as follows (see Appendix-B. 1):
 - a. The condemned inmate's ankle and wrists shall be buckled down simultaneously.
 - b. The strap across the chest and below the knees shall be placed on the inmate. The strap across the stomach and above the knees shall be placed on the inmate.
4. The members of the Tie-Down Team are escorted out of the execution chamber.

NEW YORK**IV. Procedures to be Followed for Condemned Persons on Execution Date Green Haven Correctional Facility**

....

V. In accordance with Correction Law Section 658, the punishment of death shall be inflicted by lethal injection.**A. Supplies and Equipment**

The New York State Department of Correctional Services will utilize routinely available intravenous systems, extension sets, angiocaths and a variety of syringes. A combination of normal saline, sodium pentothal, pavulon and potassium chloride shall be used progressively so as to cause the death of the condemned inmate.

B. Personnel

1. The Department shall identify two legally-qualified individuals proficient in starting and administering IV fluids. The identity of these individuals shall not be disclosed.

NEW YORK, cont.

2. A physician shall be identified by the Department of Correctional Services in order to examine the inmate following the lethal injection to pronounce death. The identity of this individual shall not be disclosed.

C. Preparation

1. One hour before the scheduled time of execution, personnel will enter the Injection Team Room.
 - a) They will remove the contents of the Lethal Injection Kit and prepare the syringes for injection.
 - b) Using adhesive tape and marking pens, they will label the syringes as follows:
 1. The two sodium pentothal syringes will be labeled "SP1" and "SP2".
 - c) The three pavulon syringes will be labeled "Pav1", "Pav2" and "Pav3"
 - d) The three potassium chloride syringes will be labeled "PC1", "PC2" and "PC3".
 - e) The two normal saline syringes will be labeled "NS".
2. Thirty minutes prior to the scheduled time of execution, personnel will set up two 500cc saline IV solutions by connection to the IV start kits.
 - a) Two separate IV lines will be used.
 - b) The IV extension sets will be connected to the IV start kits and the two lines will be passed through the opening of the wall into the Execution Chamber.
 - c) The flow of both IV lines will be checked by regulating each flow clamp. When the flow has been checked, the flow clamps will be shut off.
3. Five minutes prior to the scheduled time of execution, the inmate is rolled into the Execution Chamber, already strapped and secured to the gurney and the gurney is locked in place.

NEW YORK, cont.

4. Personnel will enter the Execution Chamber to set up the two angiocaths, one in each forearm or other usable vein.
 - a) Personnel may wear disposable surgical masks, gowns and surgical gloves.
 - b) Each angiocath will be connected to an IV extension set which leads to one of the 500cc saline solutions.
 - c) Personnel will then start and regulate the flows of both IV saline solutions at a rate of 10 to 15 drops per minute.
5. Personnel will then connect the cardiac monitor leads to the condemned inmate.
 - a) The audio signal of the cardiac monitor shall be silent or set to the lowest sound level if it is not capable of being muted.
 - b) The cardiac monitor screen will be positioned in the Execution Chamber so as to be observable by the media and civilian witnesses.
6. Upon completing all connections, personnel will exit the Execution Chamber and notify the Superintendent that they are ready to commence the lethal injection.
7. After the Commissioner declares that no stay of execution has been ordered, he will direct the Superintendent to proceed with the execution.
8. The Superintendent will order appointed staff to open the curtain and the executioner will commence the flow of the lethal injection. The executioner will follow this sequence:
 - a) The flow of the IV saline solution of the left arm will be shut off with the flow clamp.
 - b) The "SP1" syringe containing sodium pentothal will be inserted into the "Y" injection tube of the designated arm IV extension set and the injection shall commence. When emptied, the "SP1" syringe will be removed from the injection tube.

NEW YORK, cont.

- c) One "NS" syringe of normal saline will be inserted into the "Y" injection tube and the entire contents injected to flush the line. The emptied syringe will then be removed.
- d) The "PAV 1" syringe containing pavulon will be inserted into the "Y" connection tube and the contents injected.

- i. CAUTION: If all of the sodium pentothal has not been flushed from the line, mixture with the pavulon may create flocculation (solid particles) to block the flow of the fluid through the angiocath. If blockage occurs, the remaining injections must be made in the contingency line running to the alternate site.

When the contents of the first pavulon syringe have been injected, the second pavulon syringe, "PAV 2", will be inserted into the "Y" connection tube and injected. The emptied syringe will then be removed.

- e) The second "NS" saline syringe will be inserted into the "Y" connection tube and the entire contents will be injected to flush the line. The emptied syringe will then be removed.
- f) The "PC 1" potassium chloride syringe will be inserted into the "Y" connection tube and the entire contents shall be injected. When the contents of the first potassium chloride syringe have been injected, the second potassium chloride syringe, "PC 2", will be inserted into the "Y" connection tube and injected. The emptied syringe will then be removed.

NEW YORK, cont.

9. After the second potassium chloride syringe has been removed from the line, the executioner will observe the inmate for a period of five (5) minutes. If it appears that the inmate has ceased breathing, the executioner will notify the security supervisor in the chamber that the inmate has ceased breathing.
10. If at any time after the flow of lethal injection has commenced, the Governor or appropriate court issue a stay of execution, the Superintendent will immediately issue a STOP order. The Superintendent will then order the Security Supervisor in the chamber to:
 - i) Signal to draw the curtains to the closed position.
 - ii) Direct the executioner to cease the flow of lethal drugs.
 - iii) Summon the physician to undertake revival procedures.
11. The curtain will be closed.
12. After the curtain has been closed, the physician will be escorted to the Execution Chamber.
13. The physician will conduct an examination to determine whether the inmate died following the lethal injection and will pronounce the inmate dead under those circumstances.
 - a) If the inmate has died, the physician will inform the security supervisor that he has pronounced the inmate dead and the time of the pronouncement.

....

NEW YORK, cont.

- b) If the inmate is still alive, the physician will inform the security supervisor that the inmate is still alive. The security supervisor will announce to the witnesses that the inmate is still alive and that in accordance with the law, the lethal injection process shall be repeated. The physician will exit the room. The security supervisor will order the curtains to be opened and direct the executioner to proceed. Upon completion of the repeat of the execution process, the procedure outlined in #13 above shall be repeated.
- 14. After the witnesses have been removed, both IV lines will be removed from the veins. The equipment and lethal drugs will be secured in the lethal injection kit. The needles will be placed in a sharps container.

NORTH CAROLINA**LETHAL INJECTION:**

The inmate is secured with lined ankle and wrist restraints to a gurney in the preparation room outside the chamber. Cardiac monitor leads and a stethoscope are attached. Two saline intravenous lines are started, one in each arm, and the inmate is covered with a sheet.

The inmate is given the opportunity to speak and pray with the chaplain. The warden then gives the condemned an opportunity to record a final statement that will be made public. After the witnesses are in place, the inmate's gurney is taken into the chamber by correctional officers who draw the curtain and exit. Appropriately trained personnel then enter behind the curtain and connect the cardiac monitor leads, the injection devices and the stethoscope to the appropriate leads. The warden informs the witnesses that the execution is about to begin. He returns to the chamber and gives the order to proceed.

The saline intravenous lines are turned off and the thiopental sodium is injected which puts the inmate into a deep sleep. A second chemical agent, procuronium [sic] bromide (the generic name for Pavulon), follows. This agent is a total muscle relaxer. The inmate stops breathing and dies soon afterward.

NORTH CAROLINA, cont.

The warden pronounces the inmate dead and a physician certifies death has occurred. The witnesses are escorted to the elevators and the body is released to the medical examiner.

Cost of execution supplies

12 each 60cc syringe@.40 each	4.80	
6 each 10cc syringe@.12 each	.72	
3 each 1000 ml saline@.71 each	2.13	
3 each I-V tubing set@.63 each	1.89	
3 each I-V set (needle)@6.87 each		20.61
12 each I-V stopcock@1.23 each	14.76	
4 each Thiopental sodium 5 gm.100 ml@37.24	148.96	
12 each Pavulon 5 ml@12.72	152.64	
TOTAL		\$346.51

OHIO

According to Joe Andrews, Communications Chief of the Ohio Department of Rehabilitation and Correction, Ohio does have a written policy. However, that policy is vague and he thought it preferable to provide the requested information over the phone.

The chemicals used for lethal injection executions are:

Sodium Pentothal

Pavulon

Potassium Chloride

....

Witnesses for the inmate and the victim are then brought in. The inmate will be given the opportunity to make a final statement. The warden gives the predetermined signal from a separate room. The technician will start the flow of chemicals.

The curtain will be pulled closed while the physician checks the inmate to pronounce death. The warden then opens the curtain and pronounces the time of death.

OKLAHOMA

Execution Process

Method of Execution: Lethal Injection.

Drugs used:

Sodium Thiopental causes unconsciousness.

Pancuronium Bromide stops respiration.

Potassium Chloride stops heart.

Two intravenous lines are inserted, one in each arm.

The drugs are injected by hand held syringes sequentially into the intravenous lines, alternating

between the two lines. The sequence is in the order that the drugs are listed above. Saline is

also injected after each drug is injected.

Three executioners are utilized, with each one injecting one of the drugs.

OREGON

Miscellaneous Capital Punishment Facts

Chemicals used in procedure:

Oregon Statute: "The punishment of death shall be inflicted by the intravenous administration of a lethal quantity of an ultra-short-acting barbiturate in combination with a chemical paralytic agent and potassium chloride or other equally effective substances sufficient to cause death."

Sodium Pentothol (induces sleep)

Pancuronium Bromide (stops breathing)

Potassium Chloride (stops heart)

....

The Final Minutes

At 11:30 p.m. the assistant superintendent, security, confirms that the clock used to determine the time to carry out the execution is accurate. The superintendent accompanies the executioner(s) to the execution room and ensures that the confidentiality of the executioner is not compromised.

Once restraints have been applied to the inmate, the Special Security Team leader instructs the officer supervising the execution room cell to open the cell door. The leader supervises the activities of the Special Security Team members, who escort the inmate in security restraints from the cell and position and properly restrain the inmate on the table. There are no visits once the inmate has been moved to the execution room.

Medically trained individuals connect a heart monitor to the inmate which helps determine when death has occurred. They also insert two intravenous catheters –

one primary and one back-up – in the most appropriate locations on the inmate's body, usually the arms and/or hands.

OREGON, cont.

Following insertion of the intravenous catheters the witnesses are escorted to the witness area. Two correctional captains are stationed in the witness area to assist witnesses and maintain decorum. If at any point in the execution process a stay of execution is ordered, the superintendent shall halt all execution procedures and the witnesses shall be removed.

The Execution

Immediately prior to execution, the assistant superintendent, security, inspects all straps, and with the assistance of medically trained staff, makes a final inspection of the intravenous catheters and the injection equipment. Upon authorization from the superintendent the window coverings are lifted so the witnesses can see the inmate in position on the table. The table is designed to slightly elevate the inmate's head so witnesses have full view of the actual execution.

If no stay of execution has been received via the open phone lines to the governor and the attorney general, as soon after midnight as possible, the superintendent signals the executioner to begin injection of lethal solutions into the injection port of the intravenous catheters. As prescribed by ORS 137.473, the lethal solutions include an ultra-short acting barbiturate in combination with a chemical paralytic agent and potassium chloride or other equally effective substances sufficient to cause death.

The executioner signals the superintendent when infusion of the lethal substances has been completed. Once death occurs, the time is noted. The superintendent summons a medical professional to officially certify the inmate's death. The superintendent announces the time of death to the witnesses. The time of death is conveyed via telephone to the communications manager who announces it to the media assembled in the media center.

PENNSYLVANIA

According to Susan McNaughton, Press Office, Penal & Correctional Institution of the Commonwealth of Pennsylvania, apart from what is available on the internet, Pennsylvania's lethal injection protocol is confidential. The following information is derived from <http://www.cor.state.pa.us/deathbck.htm>.

When a death sentence has been affirmed by the Supreme Court, the punishment of death shall be inflicted by injecting the convict with a continuous, intravenous administration of a lethal quantity of an ultrashort-acting barbiturate in combination with a chemical paralytic agent approved by the Department of Corrections until death is pronounced by a licensed physician. Punishment shall be supervised by the warden or superintendent of the penitentiary designated by the Department of Corrections for the execution.

SOUTH CAROLINA

According to an e-mail written by Susan Buff, South Carolina Department of Correction, a list of the chemicals used in a lethal injection was not available because, "[t]his information you have requested is not considered public information."

Http://www.state.sc.us/scdc/capitalpunishment/capitalpunishment.htm, provides the following information.

If the person waives the right of election and the penalty was imposed on or after 6/8/95, the penalty will be administered by lethal injection.

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Lethal Injection

Legislation signed into law on June 8, 1995, provided the option of lethal injection as a means of executing a condemned person. South Carolina was the 25th state to authorize capital punishment by lethal injection. In order to secure and utilize the controlled substances, the Department of Corrections had to be licensed/certified by the Federal Drug Enforcement Administration, the Department of Health and Environmental Control and the State Board of Pharmacy.

Chemicals necessary to carry out lethal injection are handled, stored and disposed of in accordance with a strict protocol that limits the number of individuals who have access to the chemicals. This protocol had to be approved by the Drug Enforcement Administration and the Department of Health and Environmental Control.

SOUTH DAKOTA

According to an e-mail attachment from Michael Winder, South Dakota Department of Corrections, South Dakota's policy is documented in "Execution Guidelines.doc," which is reprinted as follows.

PREPARATIONS:

Senior ranking officers should do the actual strapping of the inmate to the gurney. An I.V. will be put in both arms, with one intended as a back-up. In the event that the inmate was a heavy drug user with bad veins, the I.V. may have to be put in the feet or the neck. The inmate will not be sedated before hand. The inmate can wear regular inmate clothing or "dress outs" if they can obtain them. The inmate will wear shoes.

SOUTH DAKOTA, cont.

Curtains or blinds should be in place over the viewing windows in each witness room. Witnesses will be brought in to the viewing room after the I.V. is hooked up. The curtains/blinds will be opened at the time the execution is to begin. At the conclusion of the execution the curtains/blinds will be closed and the witnesses will be lead out.

PRIOR ARRANGEMENTS:

Prior arrangements will be made for disposal of an inmate's commissary items, personal property and his body.

WITNESSES:

The Warden shall request, by at least two (2) days' previous notice, the presence of the following at the execution:

- The Attorney General.
- The trial Judge before whom the conviction was had or his/her successor in office.
- The State's Attorney and Sheriff of the county where the crime was committed.
- Not more than ten (10) reputable adult citizens, including at least one (1) member of the news media.

The Warden will also arrange for the attendance of the prison physician and two (2) other licensed physicians of this state. The Warden will also arrange for the attendance of such prison guards and peace officers as he may deem proper (SDCL 23A-27A-34).

At the request of the inmate; ministers of the gospel, priests or clergymen of any denomination as the inmate may require (not exceeding two) and any relatives or friends (not exceeding five) will be permitted to attend the execution (SDCL 23A-27A-35).

The presence of any person under the age of eighteen (18) years old, unless a relative, will not be permitted. No relatives of tender years will be admitted (SDCL 23A-27A-36). "Tender years" is defined as five (5) years old or younger.

SOUTH DAKOTA, cont.**CHEMICALS:**

Any pharmacist or pharmaceutical supplier is authorized to dispense the drugs to the Warden, without prescription, for carrying out the provisions of an execution (SDCL 23A-27A-32). The chemicals will be kept in a secured location until they are needed.

The chemicals to be used are Sodium Thiopental (lethal dose – sedate person), Pancuronium Bromide (muscle relaxant – collapse diaphragm and lungs) and Potassium Chloride (stops heart beat). In between each dose of the prescribed chemical, a saline solution will be run through the I.V. line(s) to ensure that the lines are kept free of any blockage.

CHEMICAL ROOM:

The chemical room has a one-way mirror that permits people in the room to see out but does not permit people from the outside to see inside the room.

The Attorney General, Governor and any Department of Corrections' officials (other than the Warden) may be in this room. Arrangements will be made ahead of time to have an Emergency Medical Technician (EMT) present who meets the criteria in SDCL 23A-27A-32. The EMT will be in the execution room for a short time to hook up the I.V. to the inmate. The other end of the I.V. line will be inside the chemical room. The EMT will then go inside of the chemical room and will administer the chemicals upon the signal from the Warden.

EXECUTION ROOM:

The Warden, the inmate and a minister of the gospel/priest/clergyman (if requested by the inmate) will be the only people in the execution room. The inmate will be allowed time to give a final statement. The final statement will be recorded through a microphone near the inmate.

Approximately three (3) minutes after the administering of the last chemical, the doctor will be brought into the execution room. The doctor will pronounce the inmate dead.

SOUTH DAKOTA, cont.**POST EXECUTION:**

Immediately after the execution, a post-mortem examination of the body will be made by the physicians present. They shall report in writing the result of their examination stating the nature thereof and the finding made (SDCL 23A-27A-38). After the post-mortem examination of the body, unless claimed by some relative, will be interred in a cemetery within the county where the penitentiary is situated (SDCL 23A-27A-39).

DISABILITY OF WARDEN:

In case of the disability from illness or other sufficient cause of the Warden to whom the death warrant is directed to be present and execute the same, it shall be the duty of the principal Deputy Warden or such other officer of the prison as may be designated by the Warden to execute the warrant and to perform all other duties imposed upon the Warden (SDCL 23A-27A-41).

Counseling and debriefing will be made available to staff who witness the execution.

TENNESSEE

According to Steve Hayes, Public Information Officer, Tennessee Department of Correction, Tennessee uses the following chemicals in a lethal injection procedure:

1. Sodium Pentothal
2. Pancuronium Bromide
3. Potassium Chloride

The following constitute pages relevant to Tennessee's Execution Procedure:

Day 4 Execution Day
12:00 a.m.

1. By prior planning, the execution team will be brought in through the vehicle gate by Administrative Assistant or designated staff member. They will be taken directly to executioner waiting area in Building 8. Their identities will be known by least number of staff necessary.

TENNESSEE, cont.

2. Beginning at 12:00 a.m., the only staff authorized in the capital punishment complex are:
 - a. Commissioner or designee
 - b. Warden
 - c. Deputy Warden
 - d. Administrative Assistant
 - e. Death Watch Supervisor and assigned officers
 - f. Chaplain
 - g. Medical Doctor and associate
 - h. Executioner (executioner waiting area)
 - i. IV Team
 - j. Extraction Team
3. Inmate will be dressed in cotton trousers, shirt, cotton socks, or cloth house shoes.
4. Official witnesses will report to the Administration Building conference room no later than 12:00 a.m., be greeted by two designated DOC escort staff, security cleared and moved to Building 9 Parole Board Room, where they will remain until later escorted to the witness room of the execution chamber.
5. Immediate family members of the victim will report to the Administration Building no later than 12:30 a.m. and be greeted by two designated DOC employees. These witnesses will be security-cleared and escorted to the Building 8 conference room. Viewing of the execution by these witnesses will be provided by means of closed circuit television at the designated time.
6. The Administrative Assistant or designate and physician will report to the execution chamber for preparation. The Administrative Assistant or designate will check the phones in the chamber. The IV Team will ready the equipment and the physician will stand by in the designated waiting area.

.....

12:55 a.m.

1. Beginning at 12:55 a.m., the only staff authorized in the execution chamber are the Warden and those TDOC employees designated by him to carry out the execution.

TENNESSEE, cont.

2. At the command of the Warden or Deputy Warden, the Extraction Team will approach the holding cell and ask the condemned inmate to approach the cell door and be handcuffed. After being handcuffed, he/she will be asked by the Extraction Team Leader to step back and place his/her hands above his/her head on the wall at the rear of the holding cell. (If the condemned inmate refuses to cooperate, the Extraction Team will enter the holding cell and remove inmate.)
3. At this point the Extraction Team will unlock the cell door to allow the Extraction Team to enter. The condemned will then be escorted from the cell and placed on the gurney and secured with restraints affixed to gurney.
4. The gurney will be moved to the designated area in the execution chamber and secured in place. The Warden, Deputy Warden and Chaplain will accompany the condemned into the execution chamber. The Extraction Team and Chaplain then leave the execution chamber and return to the holding cell area.
5. The Administrative Assistant or designate will record the time the condemned entered the execution chamber.
6. The IV technicians will insert a catheter into each arm, attach the tubing, and start an IV consisting of saline solution. The IV Team will then leave the execution chamber and return to the holding cell area. The physician will be available in the designated waiting area and will perform a cutdown procedure if the IV technicians are unable to find a vein that is adequate enough to insert a catheter.
7. Official witnesses will be secured in the official witness room.
8. The closed circuit television camera and audio system will be activated.

1:00 a.m.

1. The Warden shall contact the Commissioner to insure that no last minute stay or respite has been granted.
2. The Warden will permit the inmate to make a last statement.
3. The Warden will give the signal to proceed and the injection procedure will continue until all the chemicals have been injected into the condemned and the person is presumed dead.
4. The Administrative Assistant or designate will record the times the injection process begins and ends.

TENNESSEE, cont.

5. Following the completion of the injection process, and a five-minute waiting period, the blinds to the official witness room closed, closed-circuit TV camera disengaged, and privacy curtain closed, the Warden will ask the physician to enter the room to conduct an examination. If the inmate is not dead, the physician will return to the designated waiting area. The curtain will be opened, blinds raised, cameras activated, and the Warden shall give the command to repeat the injection procedure. After this procedure is completed, the blinds will once again be closed, closed-circuit TV camera disengaged, and the privacy curtain closed. The Warden will once again ask the physician to enter the room and check for signs of life. The physician shall then report his findings to the Warden or designee.
6. The inmate is pronounced dead. The Administrative Assistant or designate records the time that death is pronounced.
7. The Warden or designate announces that the sentence has been carried out and invites witnesses to exit. "The sentence of _____ has been carried out. Please exit to the rear at this time."

TEXAS**Execution Procedures of Inmates Sentenced to Death
Texas Department of Criminal Justice Institutional Division**

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The Huntsville Unit Warden's Office will serve as the communications command post and only operations personnel be allowed entry to this area. All other individuals, including witnesses to the execution, will assemble at approximately 5:54 p. m. in the lounge adjacent to the visiting room. All necessary arrangements to carry out the execution shall be completed at the predetermined time. Shortly after 6:00 p.m., the door will be unlocked, and the inmate will be removed from the holding cell.

The inmate will be taken from the cell area into the execution chamber and secured to a gurney. A medically-trained individual (not to be identified) shall insert an intravenous catheter into the condemned person's arms and cause a saline solution to flow.

At a predetermined time, the witnesses shall be escorted to the execution chamber...

....

TEXAS, cont.**Lethal Injection consists of**

Sodium Thiopental (lethal dose - sedates person)

Pancuronium Bromide (muscle relaxant-collapses diaphragm and lungs)

Potassium Chloride (stops heart beat)

The offender is usually pronounced dead approximately 7 minutes after the lethal injection begins.

UTAH

The following is derived from [http://www.udc.state.ut.us /community/faq /indexhtml](http://www.udc.state.ut.us/community/faq/indexhtml)

Utah currently has two methods of execution; lethal injection and firing squad. The choice of which method is carried out is left to the condemned offender.

The following information was provided in a conversation with Jack Ford, Director of Public Relations, Utah Department of Corrections.

The chemicals used in a lethal injection execution:

Sodium thiopental

Pavulon

Potassium Chloride

According to Mr. Ford, "We cannot legally send a procedure. We would only be able to give clearance for states about to execute an inmate."

....

The problems Mr. Ford discussed with respect to Utah's lethal injection procedure:

.... Another problem was cited by an independent reviewer who said that we [Utah Department of Corrections] give more chemicals than necessary in the lethal injection executions. The question being, if we're going to kill the guy what does it matter if its more? We use 10 ccs, I believe and it is typically 5 across other states. The medical director should have that information from the reviewer.

VIRGINIA

According to Larry Traylor, Director of Communications, Virginia Department of Corrections, "For security and safety purposes we do not release the names of the chemicals used in a lethal injection." Mr. Traylor also provided a word document that contained the following information.

Electrocutions

....

The electric chair itself is simply a homemade oak armchair with leather straps attached. It is the same chair that was used at the Penitentiary in Richmond and is believed to have been built there in 1908.

The electrical mechanism is new and was installed when the chair was moved from Richmond to Greensville Correctional Center in May of 1991. The equipment is designed to deliver approx. 1825 volts for 30 seconds then 240 volts for 60 seconds. There is a pause of five seconds, then the cycle is repeated. The equipment, therefore, is operated for a total of three minutes. The cycle was designed to render the condemned brain dead within the first few moments. The function of the remainder of the cycle is to stop the heart so that a physician can certify that death has occurred.

Lethal Injection

Lethal injection became an option to the electric chair in Virginia on January 1, 1995. At least fifteen days prior to his scheduled execution, the death row inmate makes the choice between injection and electrocution. If the inmate makes no choice, lethal injection is automatic.

....

The inmate is escorted into the chamber just prior to the appointed hour. The curtains separating the witness room and the execution chamber remain open until the inmate is restrained to the table. Once the inmate is restrained, the curtains are closed and remain closed until the IV lines have been established, normally, one in each arm. The curtains are reopened and the Director gives the order to carry out the sentence of the court.

Three separate chemicals are injected, each separated by saline solution. The first chemical stops brain activity, the second causes respiration to cease, and the third stops the heart.

When the Director is informed that death has occurred, the curtains are closed and the witnesses are escorted from the Death Chamber.

WASHINGTON**F. Conduct of the Execution**

....

3. Execution Procedure**b. Lethal Injection Procedure.**

- 1) Lethal Injection Materials.
 - a) All tubing, syringes, saline solution and other apparatus shall be on site and verified no later than one week prior to scheduled execution.
 - b) The Superintendent will direct the acquisition of the appropriate quantities of lethal substances in accord with the currently approved checklist. These shall be available and on site one week prior to the scheduled execution date.
 - c) The Superintendent will assure the security and continued verification of all materials.
- 2) Lethal Injection Table. The Health Care manager, in conjunction with the Plant Manager, shall examine and verify that the lethal injection table is In working condition with all restraints available.

Author's note: The Washington document skips from 2 to 4 and it doesn't appear to have been copied with a section blocked out.

- 4) Preparation of the Execution Area.
 - a) The injection team will inspect the area designated for lethal injection and make any final recommendations
 - b) The injection team will assemble all necessary -materials for transport to the execution chamber no less than one hour prior to the scheduled time of execution.

WASHINGTON, cont.

- c) The injection team leader will secure the lethal substances and personally transport them to the execution chamber.
 - d) The solutions for injection should be freshly prepared no longer than 30 minutes prior to administration.
- 5) Execution process.
- a) The superintendent shall direct that the inmate be brought to the execution chamber and the escort team shall place the inmate on the lethal injection table and appropriately secure the inmate to the table. The escort team will then leave the room.
 - b) The injection team will start a normal flow of saline in the right and left arms. The injection team shall insure that a slow, normal saline flow is maintained.
 - c) Upon notification from the Superintendent, the injection team will introduce the following lethal solutions (a bolus injection shall be used) into the tubing in the specified order:
 - i. 2 g/50cc thiopental sodium
 - ii. 15 cc normal saline
 - iii. 50 mg/50 cc pancuronium bromide
 - iv. 15 cc normal saline
 - v. 1.50-2.70 mEq/kg potassium chloride (KCl)
 - d) Either line may be used for injection of solutions as required.
 - e) The injection team leader will signal the Superintendent that all of the solutions have been administered.

WASHINGTON, cont.

- f) After an appropriate time, the Superintendent will close the curtains and call for the physician to examine the body and make pronouncement of death.
- g) After the pronouncement of death, the injection team shall remove the appropriate apparatus and saline solution and remain in the injection area until all other witnesses have been removed.
- h) Post-execution procedures shall be followed.

WYOMING

According to Melinda Brazzale, Wyoming Department of Corrections, Wyoming does not have an execution room or "many executions." The last execution in Wyoming occurred in 1992 and the execution before that occurred in 1965. Ms. Brazzale could not provide an execution protocol in hard copy format because she had only "hand written notes."

The chemicals used in the lethal injection are:

Sodium Pentothal
Pancuronium Bromide
Potassium Chloride

The gas chamber was never used from the time it was built through 1992. In 1992, Wyoming changed the execution methods statute to indicate that lethal injection would be the new mode of execution. Ms. Brazzale believes that the legislature moved to lethal injection because no one knew how to operate the gas chamber, even though there is no documentation for this rationale

The following is derived from <http://legisweb.state.wy.us/titles/20titles/title07/c13a9.htm>.

ARTICLE 9

... of death is imposed by the court in any criminal case, the punishment of death shall be executed by the administration of a continuous intravenous injection of a lethal quantity of an ultra-short-acting barbiturate in combination with a chemical paralytic agent, until death is pronounced by a licensed ...

